

PREFACE

In the curricular structure introduced by this University for students of Diploma programme, the opportunity to pursue Diploma course in Subjects introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation.

Keeping this in view, study materials of the Diploma level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analysis.

The accepted methodology of distance education has been followed in the preparation of these study materials. Cooperation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing and devising of a proper lay-out of the materials. Practically speaking, their role amounts to an involvement in 'invisible teaching'. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner would seriously pursue these study materials the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that they may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up by the University.

Needless to add, a great deal of these efforts is still experimental—in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

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Vice-Chancellor

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DIPLOMA
[PRE-PRIMARY TEACHERS' EDUCATION—MONTESSORI]

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Unit 1 □ Concept, nature and scope of education structure

Structure

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1.1 Introduction

Man does not satisfy his physical needs like all other animals. He also fulfils the cultural needs. He acquires this cultural need from the society after his birth. He is regarded as a member of the certain society because of his instinctive love for culture. This characteristic specially differs man from other animals. Man acquires this love for culture through education which makes man progressive.

What do we understand by this education? What is the nature or characteristic of education? How far is the scope of education extended? In order to know all these a brief discussion is one in the present unit about concept, nature and scope of Education.

1.2 Objectives

By reading this unit you will be able to

- give the definition of Education
- say about the conception of Eastern and Western Education
- describe the narrow and wide meaning of education
- explain the nature (characteristic) of education
- discuss the scope (range) of education.

1.3 Literal Meaning of Education

In order to know the meaning of the word 'Education' we are to search for the origin of this word. According to the Indian scholars this word 'Education' has been originated from Sanskrit 'Sas' dhatu (‘सस्’ धातु) which means ‘to rule’, ‘to discipline’, ‘to chain’, ‘to control’, ‘to train’ or ‘to direct.’ Again, ‘Education’ is many times also used as ‘Bidya’ (বিদ্যা). This word ‘Bidya’ has been originated from ‘Bid’ (বিদ্) Dhatu (ধাতু) which means ‘to know’ or ‘to acquire knowledge’. So the words ‘Sas’ (সাস্) or ‘Bidya’ (বিদ্যা) in both cases seem to be related to education. Both these two words indicate the process of the acquisition of knowledge.

Again, the English synonym of the word ‘Siksha’ (শিক্ষা) is ‘Education’. The educationists and the linguists believe that the word ‘Education’ has been primarily originated from four Latin words like ‘Educare’, ‘Educatum’, ‘Educere’ and ‘Educo’.

The word ‘Educare’ means ‘to bring up’, ‘to nourish’ ‘to train’ and ‘to mould’. In this sense Education is to help a child or an immaturred person to acquire skilfulness and efficiency suitable and fit for life through proper nourishment and care.

The word ‘Educatum’ means ‘the work of teaching’, ‘the act of teaching or instruction’. In this sense, the sum total of all the strategies of the act of teaching or instruction is ‘Education’.

The word ‘Educere’ means ‘to extract’, ‘to draw out’, ‘to lead out’ or ‘to bring forth’. In this sense education is the inherent process of the manifestation of all the Latent potentialities in a child. The meaning of education is to unveil the Latent (concealed) powers in the child.

In the word ‘Educo’, the meaning of ‘E’ comes from the English phrase ‘out of’ and ‘duco’ means ‘to direct’ or ‘to lead’. So the meaning of this word ‘Educo’ is the revelation of the Latent or sleeping possibilities of man.

Let your progress be tested :

1. Which Dhatu (ধাতু) is the word ‘Education’ derived from according to the Indian educationists and what is its meaning?

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2. Which word is the word ‘Education’ derived from and what are the meanings of these words?

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1.4 Eastern and Western concept about Education

1.4.1 Eastern concept about Education

The Upanishad—“Education is that whose end product is salvation.” সা বিদ্যা যা বিমুক্তয়ে, The Rigveda—“Education makes man self reliant.”

Vivekananda—“Education is manifestation of the divine perfection already existing in man”.

Tagore—“Education makes one’s life in harmony with all existence”.

Aurobindo—“Education is helping the growing soul to draw out that is in itself.”

Gandhi—“By Education, I mean all-round drawing out of the best in child and man-body, mind and spirit.”

1.4.2 Western concept about Education

Aristotle—“Education is the creation of a sound mind in a sound body.

Pestalozzi—“Education is the natural harmonious and progressive development of man’s innate powers.”

Dewey—“Education is a process of continuous reconstruction of experience.”

Spencer—“Education is the preparation for complete living in future.”

Thompson—“Education is the influences of environment on the individual with a view to producing a permanent change in his habits, behaviour of thought and attitude.”

Test your progress :

1. Mention the definition of Education given by Pestalozzi.

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2. “Education is the manifestation of the divine perfection already in man.”
Who said this?

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3. Give a definition of education on the basis of Eastern and Western concept of Education in your own language.

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1.5 The narrow and wide meaning of Education

1.5.1 The narrow meaning of Education

- (i) By Education we mean the instruction and training imparted by the school, college and university. So the Institution of the Formal Education is the only organization of Education.
- (ii) Education is the acquisition of some knowledge or some skills.
- (iii) In this sense the aim of education is to get the child skilful in some lessons and prepare it to obtain a degree keeping it either in an educational institution or under an experienced person.
- (iv) The task of teaching and training is only entrusted to a specially expert responsible person in a society. The teacher is the source or container of knowledge and the children are the tireless receiver. In this type of education the teachers are given top most importance in all respects.
- (v) In this system of education less importance is given to the individual excellence.
- (vi) This system of education only keeps reliance on the mental development of the child through text book centric knowledge acquisition.
- (vii) In this narrow sense, education is accepted as a particular time based programme of action in the life of this learner. This period is limited to the school life of the learner.
- (viii) In this narrow sense the main aim of education is to acquire experience or efficiency in a special subject driven by necessity on demand.
- (ix) In the narrow meaning of Education there is no variety in Teaching Training Method.

- (x) This sort of education is unchangeable and motionless. This is not changeable in keeping with the development of the society.
- (xi) Here discipline is externally imposed.

1.5.2 Wide meaning of Education

- (i) In this sense, Education is the all round development of all potentialities in a child.
- (ii) The aim of this type of education is the all round manifestation of physical, mental, divine, social, spiritual, moral etc. aspects of life in a child.
- (iii) In this sense education is one type of life long process in a child. It means education is not limited to the educational institution life of a man or a child.
- (iv) It is necessary to acquire multipurpose experience and knowledge for the revelation of the whole life of a child.

The comprehensive revelation of all sides of life is not possible only through a few certain unchangeable theoretical experiences. So, it is desirable that the contents of education should be framed with co-ordination of the required theoretical knowledge and practical experiences. Naturally, the wider view of education includes this conception regarding the contents of education.

- (v) Here the role of the teacher is a guide. He is the incarnation of a life-ideal to the learner. He is regarded as his real friend and assistant. The relation between the teacher and the taught is easy and natural.
- (vi) In the wider meaning of education, much importance is laid upon the active participation of a learner.
- (vii) In this sense, education is based on the demand of the child. The demand of the child is given enough importance in the determination of all the materials of education like curriculum, object, aim, teaching method, environment etc. In a word it may be stated that this education relies on child centred education.
- (viii) In this sense education is an uninterrupted process to keep pace with the variety of environment in the everchanging life a child. Man performs this act through the construction and reconstruction of his self active experience.

Test your progress :

1. In what type of development does narrow sense Education lay importance?

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2. What is the role of the teacher in Education in wider sense?

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1.6 Characteristic or Nature of Education

Education is used in different fields and in different meanings. It is difficult to give a definite definition of education. In order to understand the clear meaning of education, its characteristic or nature is to be known.

- (i) Education is a complex process. The meaning of education is changeable because the aim of education is changeable according to place, time and situation. So the meaning of education is always flexible.
- (ii) Education is the acquisition of experiences to fulfil a definite aim and accepted by the society through training. The behavioural change in a person is education.
- (iii) The process of the manifestation of the latent powers in a person is education.
- (iv) Education is an uninterrupted (ever continuing) process the journey of which begins with the birth of a child and ends at its death.
- (v) Education is the process of growth and development (revelation).
- (vi) Education is the process of adjustment.
- (vii) Education is a process of the construction and reconstruction of experiences.
- (viii) Education is the process of preserving and leading the civilization, culture and cultural values.
- (ix) Education is a social welfare process. Education not only exercises (practises) the problematic behaviour of the learner but also applies the research-results earned during the practice period in human welfare through expansion.

- (x) As education is a process, so it has its effects. As a process it helps the manifestation of different abilities and qualities in man. As the result is that education is the complete manifestation of a person through training.
- (xi) Education is such a strategy through which all the qualities and values of a person are manifested.

Test your progress :

1. Discuss in brief the nature of education.

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1.7 Scope of Education

The behaviour and the activities of a person are associated with education. So the scope of the Science of Education is spread in all the human behavioural problems. A brief account of the scope of modern Education Science is given below.

1.7.1 Education-Philosophy

One of the points of education is to determine its aim. No work can achieve success without any aim. Philosophy has an important role in the determination of aim. The life philosophy of a person is built up as he sees life and the world and the aim of education is determined accordingly. In fact, philosophy in life is built up on the basis of philosophy and philosophy in Education is built up in keeping with philosophy in life. This Education-Philosophy helps to determine the aim of education, nature of education, importance, work, the role of the teacher, discipline, the role of the learner etc. So the study of Education-Philosophy has been included in the scope of Education.

1.7.2 Educational Psychology

The aim of Education having been fixed, it becomes indispensable to determine its means and method. The mental nature and condition of those for whom the syllabus and method are to be selected, require to be considered. The subjects to be considered in this

phase are individual characteristic, receptibility, interest, intelligence etc. Psychology as an applicable branch of Psychology supplies important information here. So Educational Psychology has been included in the scope of Education.

1.7.3 Education and Sociology

All round development of the personality of a child depends on the adjustment with social environment. So it is necessary for a child to be acquainted properly with the customs, regulations, culture, heritage etc. of the society where it lives. Even it is an inevitable task to form an idea what cost of social relation in the society exists. In this case education based social science helps to make a man suitable to the society by supplying necessary knowledge. So Education based social science naturally cannot exist outside the range of education.

1.7.4 Education Hygiene

As sound body is required to keep the education process active, so sound mind is also necessary. So it is necessary for the learner to be conscious of Mental Health. So this Mental Hygiene has been included in the scope of Education.

1.7.5 History of Education

While reviewing the ideals of Education it is seen that there has been a change in keeping with the social evolution. It is necessary to know the History of Education how the aim of education has been changed in keeping with the stream of change in society and culture. So the scope of Education has been widened upto the History of Education.

1.7.6 Educational Economics

Education is the main key to development. Human resources will have to be utilized through education, because through human resources, natural resources become worthy of use. Educational Economics has important role in the field of planned management and preservation of wealth. So Educational Economics has been included in the scope of Education.

1.7.7 Direction and Counselling

All the efforts for Education will be futile unless the learner becomes fit for its future life through Educational and vocational guidance. So Educational and vocational directions have secured a place in Education.

1.7.8 Educational Statistics

It is necessary to measure how much experience the learner has acquired in the light of the destined aim. In this case, it is not possible to ascertain the correct conception about the all round development of the learner without statistics. So the practice of Statistics is an important subject of Education. In view of this Educational Statistics has been added to the scope of Education.

1.7.9 Technology in Education

Educational Technology is the latest new addition to Modern Education. At present computer based teaching method in Education has been placed before the learners. As a result the learners themselves can learn according to their own progress and at the same time can be aware of the effect of this teaching. So Technology in Education has made its place in the field of Education.

1.7.10 Comparative Education

Comparative Education is such a part of Education where the current education system, teaching technique and other aspects of education of the different countries or societies have a special comparative discussion. Besides this, comparative education supplies knowledge about the existing customs, rules, manners and culture of the various societies directly.

1.7.11 Education Administration

The whole work of Education is managed through any institution. Generally all these institutions are called educational institutions. It is discussed in this part of Education what kind of management will be able to keep the ideal environment for education and Education related human relation and how the environment congenial to education will be maintained.

Test your advancement :

1. Why has been Education-Philosophy included in the scope of Education?

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2. What is Comparative Education?

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1.8 Let us sum up

In this unit, discussion is made about the concept, nature and scope of education.

At first it is known through discussion about the original meaning of 'Education' that according to the Indian Educationists the word 'Education' has been originated from Sanskrit 'Sas' and 'Bid' Dhatu the meaning of which is 'to train' and 'to know', respectively.

Again, the source of the English synonym 'Education' is four Latin words, 'Educere', 'Educare', 'Educatum', 'Educo' which mean 'to draw out', 'to bring up', 'the act of teaching or instruction' and 'to lead' or to unveil the latent possibilities.

In giving the Eastern (oriental) concept of Education, the conceptions of the 'Upanishad', 'Rigveda', Vivekananda, Rabindranath, Gandhiji etc. have been mentioned and among the western educationists the definition of Education as given by Aristotle, Pestalozzi, Dewey, Spencer, Thompson has been referred.

According to the narrow meaning Education is the acquisition of some knowledge or some skills. In this sense the aim of education is to master some lessons keeping the learner either in an educational institution or under the control of an experienced person and prepare the learner to obtain the degree. This system of education is textbook centric which only emphasises for mental manifestation through the acquisition of knowledge. On the other hand in the wider sense, the aim of education is the all round manifestation of all the possibilities in man. In this sense, education is one kind of whole life process, that is, education not confined to the educational life of a child or a person.

In order to understand the meaning of education one should know its characteristic or nature. Education is a complex process. The change in the behaviour of a person is Education. Education is a continuous process the journey of which path begins in the birth of a child and ends at its death. Education is adjustment with environment. In a word we can say that education is life.

The scope of education is spread in all problems of human behaviour. The scope of modern education spreads in the field of Educational Philosophy, Educational Psychology, Educational Sociology, Educational Hygiene, History of Education, Educational Economic, Direction and Counselling, Educational Statistics, Educational Technology, Comparative Education, Educational Administration etc. which are worth mentioning. In spite of apparent differences in the subjects included in the scope of Education, these are co-related. The aim of Education-Science is to make the whole Education process effective in a high standard and solve the various problems in the field of education. Above all, the chief aim of education is to make welfare to the mankind.

1.9 Exercise

1.
 - a. What is the original meaning of education? Explain fully what Education is in the narrow and broad sense.
 - b. Give a definition of Education. Discuss the nature of Education.
 - c. Discuss the Scope of Education.
2. Write short notes on the following :
 - a. Eastern concept of Education.
 - b. Western concept of Education.
 - c. Education-Psychology.
 - d. Education-Sociology.
 - e. Direction and Counselling.
 - f. Comparative Education.

Unit 2 □ Pre-primary Education : Historical Background

Structure

2.0 Introduction

2.1 Objectives

2.2 Pre-primary Education : Historical Perspective

2.2.1 The open window

2.2.2 Pre-primary Education in India

2.2.3 Inclusion of the child in Education as an art of Institutional education

2.3 Summary

2.4 Assessment of progress

2.5 Exercise

2.0 Introduction

The education system of our country is very old. There was no arrangement of Pre-primary Education in about 3000-3500 B.C. when the Vedic Education system was introduced. The education of the Brahmin children started from the age of 8. The education of the Kshatriya and Baishya children started much later. The Buddhic Education started at the age of 8. Such was the education system of the old age. The Medieval Education system had neither continuity nor systematic arrangement, because the Medieval age was the dark age—anarchy was there all the time because of foreign invasion. The women suffered from insecurity. As a result the women received education at home. The foreign rulers arranged education according to their sweet will.

We see the Hindu children received education in the village pathshala and the Muslim children studied in the Muktabs attached to the mosques. In the Medieval Education system there was no arrangement for the children of the Pre-primary stage.

In the modern age the Missonaries built up the education system newly in our country, but child-education or pre-primary education started in our country much later. Before

Independence Gandhiji first spoke of Pre-primary Education where the children before the age of 7 received education.

After this we see that Montessori herself came to India on the eve of the Second World War and gave training in Montessori system to more than ten thousand teachers of India and Srilanka. As a result Montessori system of Education or pre-primary education attained popularity in our country slowly. In Europe Froebel's Kindergarten system attained popularity side by side of Montessori system. In our country also there two systems earned popularity slowly. In this way pre-primary education earned importance in our country.

The Central Government spread child Education through the programme of ECCE, ICDS, Balwaris etc. where there are references about Mothers' nutrition & health care and child-education. In this way pre-primary Education has advanced in our country slowly and the people have become conscious of this matter, which is absolutely desirable.

2.1 Objectives

The learners will acquire the undernoted skills through today's lessons.

1. To discuss the perspective of the pre-primary education.
2. To explain what one means by open window.
3. To analyse the contribution of Montessori in the spread of pre-primary education.
4. To mention what is meant by UN convention on child rights.
5. To say how Pre-primary Education gets importance as institutional education.

2.2 Pre-primary Education—Historical Perspective in India

In our country Pre-Primary Education is not very old. When Froebel, Montessori system was introduced in the different countries of the world, pre-primary education did not get importance in our country. In Pre-Independence period Gandhiji introduced Basic Education in which we come to know about Pre-Basic Education. According to Gandhiji Basic Education starts from the age of seven and the stage prior to it is stated as Pre-Basic Education stage when the children below seven years will receive this education.

After this we come to know that Montessori herself came to India during the Second World War and stated in her speeches in the different places of India what method requires to be followed in the field child education. She gave training to many lady teachers in her method, i.e., Montessori Method. As a result of this Montessori Method earns popularity slowly in our country.

As Pre-Basic and Basic schools founded by Gandhiji were set up in the different parts of the country, so many schools applying Montessori Method grew up.

Side by side with Montessori Method. Froebel's Kindergarten Method also earned popularity in the different parts of the country and gradually Montessori and Kindergarten schools grew up in various places of the urban area. Today the children of the urban area receive education in the much pleasant environment of this type of schools after being admitted there at the age of 2+, of course, this sort of opportunity is not available in the rural area.

Some work-programmes have been taken up in the Pre-Primary and Primary stages owing to the initiative taken by the Central Government. There projects are known as ECCE (Early childhood care and Education). ICDS (Integrated Child Development Scheme), popularly known as 'Anganwardi', Balwaris etc. The objective of ECCE is to look after the nutrition and health of the little children and arrange for their education. 'Anganwaris' are spread throughout the country and the objective of this project is to take care of the nutrition of mothers and children in all places in our State and make arrangement for the little children's education. The Anganwari centres have been working successfully to fulfil the objectives. Balwaris centres have been arranged for the boys.

Besides this, there exist Non-Government Organisations (NGO). These NGOs have taken up the responsibilities of giving education to the little children unofficially—even these NGOs have carried out the important role in respect of the Street Children.

In fact, much importance has been paid to the Pre-Primary Education officially now-a-days. Such as, in the Formal Education the children receive education from the Primary Stage. Earlier Pre-Primary Education has been included in the Primary Education thinking of the little children.

Besides this, we see that Pre-Primary Education has also been included in 'Education For All' Project and this step is very important in Pre-Primary Education.

2.2.1 The Open Window

When the child learns to walk first, it wants to stand up. It has just learnt to speak. The eagerly waits for this child-for its touch; on the other side the child is also trying to touch and grasp. The child's small ears hear everything with great surprise and the smell of thousand and thousands of things reaches its ear. The child earns the experiences of those things that it feels and preserves in its little brain. The child is small in size but its mind is extraordinary powerful case of receiving and preserving all. Every moment the child knows, every moment the child learns and every moment the child understands. Everyday the child speaks new words and everyday the power of its expression reaches at its zenith.

Where does this process of manifestation take the child? What kind of grown up shape will the child take? It depends on the child's environment—on the child's natural and social environment, on the people of the child's surroundings and besides the child's parents on its first teacher who serves the most important role on the child's life. This first teacher only opens the child's mind-window. Let the child be acquainted with its environment of his own through the open window of all round revelation. Let the air of change in the Pre-Primary Education come through the open window.

2.2.2 Pre-Primary Education in India

We see in the Education System of the Vedic age in our country that the Brahmin children went to the home of the Preceptor (Guru Griha) to receive education at the age of 8 (eight), the Kshatrya children at the age of 11 (eleven), and the Vaishya children at the age of 12 (twelve). The system of education did not start formally before the age of eight. But we come to know this the children started receiving education at home at the age of 5 (five) which is commonly known as 'Pencil in hand' (Hate Khari). The children at this age read the Vedas with their father at home. The system of education did not start before the age of five in our country. This is the education system of the old age in our country.

We call the Medieval Age as the Dark Age because anarchy or lawlessness was going on in our country. The women had no security or safety outside their residences because of foreign invasions. They were confined to the inner apartments (andarmahals). Whatever education they received, they received at home. The foreign rulers introduced education in our country according to their sweet will. As a result, we see the Pathshala for the Hindu

children in the rural areas and the Muktabs attached to the mosques for the Muslim children. With the rise of age, the Hindus went to the tolls set up centering the Hindu Pilgrimages and the Muslims went to the Madrasas where importance was given to the learning by rote and this education was religion centric.

In the Modern Age, many schools, even schools for the girls had been set up in the various parts of our country at the enterprise of the Missionaries.

In the Nineteenth Century Iswar Chandra Vidyasagar as a reformer tried to build education suitable for the children. But unfortunately, even today education has not been built up in our country in such a way and the system of education which is introduced today, is Teacher Centric and the Child Centric Education has not yet achieved importance in our country.

The great poet Rabindranath is a pathfinder of Child-Education in India. The education system followed at 'Sishu Bhaban' in Santiniketan brought about a new era in the Child-Education in India. Montessori said about Rabindranath, 'I have introduced science in Child-Education. Tagore has introduced poems.'

Montessori spent her invaluable days in India. She wrote all her famous works while staying in India. The revolutionary influence of the Child-Centric Education by Tagore and Montessori which is seen in India and South East Asia is remarkably known as 'Tagore-Montessori System'.

2.2.3 Inclusion of the child in Education as an art of institutional education

When the Second World War was imminent, many of her well wishers advised Montessori to leave Europe and she accepted the invitation to give training to the teachers in India in 1938 and within a few years she gave training to more than ten thousand teachers in India and in Sri Lanka.

The school which Montessori first started in Rome crossed one hundred years. Montessori schools have helped the children to become self-sufficient and self-controlled and assisted to the full manifestation of all the possibilities latent in the child.

Over and above this, the works which the Montessori schools perform through child-survey, beautify the environment in and around the class room in such a way that the children may be engaged in various works and that these may be helpful in the formation

of their habits through life long education, such as becoming attentive, inquisitive outlook, co-operative attitude, solution of problems etc.

We have accepted many materials of modern education from Montessori education. Open class room, guides in place of teachers, inclusion of the children of different ages, appropriate method, individual-centric education, utilization of teaching appliances—all these are the chief characteristics of Montessori Method, which we have at present accepted in the Pre-Primary Education.

In our country Pre-Primary Education of the children is not very old. Even today we all are not conscious of the utility of the education in this stage. In fact, the childhood days of our children are spent in the family environment. As there is the opportunity of Pre-Primary Education in the rural areas, the guardians at present get their children admitted in these schools—but this number is very few in proportion to the whole population. In the rural areas, there is not so much opportunity for Child-Education, specially for Pre-Primary Education. Still the happy news is that Pre-Primary Education stage has been included and is being included in the Education for all project and in the Formal Primary Education on behalf of the Government. Consequently, the village children of this stage get the opportunity to receive the education of this stage and our expectation is that a larger number of children will avail themselves of this opportunity in future. In this way arrangement is being made to bring the Pre-Primary Education under the Institutional Education.

2.3 Summary

In the Ancient and Medieval Ages there was no arrangement of Pre-Primary Education in our country. Even there was no thinking about the introduction of this Pre-Primary stage.

In the Pre-Independence period Gandhiji first talked about Pre-Basic Education where the children prior to seven years of age received education.

After this we find that Montessori herself came to India on the eve of the Second World War and gave training to more than ten thousand teachers (both male and female) in India and in Sri Lanka. After this Child Education or Pre-Primary Education gradually received importance. Side by side with Montessori Method, Froebel's Kindergarten

Method also attained popularity. There has been the mention of unrestricted liberty to the children in all these methods. Let the children be acquainted with their environment by means of their own individuality for the all round manifestation through the Open Window. Let the air of change in the Pre-Primary Education enter through the Open Window.

The inclusion of Pre-Primary Education in the Government approved ECCE, ICDS, BALWARI EDUCATION FOR ALL INVASION AND FORMAL EDUCATION has popularised the Pre-Primary Education, which is desirable to us.

2.4 Assessment of Progress

Answer the following questions

- 1) What is meant by Open Window?
- 2) What are the objectives of ECCE and ICDS?
- 3) What are the roles of 'Maktab' and 'Pathshala'?
- 4) Who introduced Kindergarten and what are its objectives?

2.5 Exercise

Answer the following questions :

1. Discuss the role of Pre-Primary Education in our country.
2. Mention the Contributions of Montessori in the spread of Pre-Primary Education and discuss the characteristics of this Method.
3. Explain the importance of Pre-Primary Education as Institutional Education.

Unit 3 Education and Philosophy

Structure

3.1 Introduction

3.2 Objectives

3.3 Education and Philosophy

3.3.1 Idealism, Naturalism, Pragmatism

3.3.2 Application of the above mentioned subjects or topics—In the Philosophic thought of Rousseau, Froebel, Gandhiji and Rabindranath

3.3.3 Manifestation of Montessori Method

3.4 Summary of the unit

3.5 Assessment of the unit

3.6 Home task

3.7 Exercise

3.1 Introduction

Education and Philosophy are co-related in the medium of human life. For this reason human life-Philosophy has been converted to Educational Philosophy in the field of education.

In the present age three kinds of life Philosophy have been manifested namely, (1) Idealism (2) Naturalism and (3) Pragmatism.

According to the opinion of the follower of Idealism, besides this mortal world there is also another world which is spiritual world. The lord of this spiritual world is God. Man is nothing but only a part of this God. The objective of the human self is to realise this Brahma or God.

Those who applied Idealism in the field of education are Froebel, Gandhiji, Rabindranath and others. Their opinion is to develop the moral, intellectual and ideal life of the learner through the syllabus of study. In their opinion the ideal teacher will be the person who has attained the complete (full) self realisation.

According to the opinion of the Naturalists the world and its natural surroundings which are visible to us are real and all other things are unreal—there is nothing beyond the material world. Aristotle, Herbart, Spencer, Froebel, Rousseau and others believe in this theory. Rousseau specially applied this theory of Naturalism in the field of education. According to this theory the objective of education is to self expression and self preservation. The child will receive education through the practical experience and own nature—this is the root of education.

Pragmatists think that man builds up his own ideals of life through the direct experience. The main principle of this theory is utility. John Dewey is the supporter of this theory of pragmatism. His disciple Kilpatrick speaks of the Project Method supporting John Dewey's theory.

Their opinion about the syllabus is that the syllabus will be flexible (changeable) as per necessity. They introduced the novel theories regarding the teaching training method and emphasized on the practical experience based specially work Centric Education.

Rousseau :

The Educational Philosophy of Rousseau is the direct application of his Life. Philosophy and Social Philosophy. In his opinion Nature is only fit for being a teacher. He was against the Medieval Education-System and opined that the child is to be taught according to the child's nature. He wanted to lay the stone of education on the Psychological Foundation. It was he who first said that child is not for Education, Education is for the child. The child will be the centre of Education-System. The system of education will have to be arranged keeping in view of the demand, taste, interest, tendency, will etc. of the child. This is called Child Centric Education. Rousseau is its propagator (founder). So Rousseau is called the father of Child Centric Education.

The objective of Rousseau's education is the all round manifestation of a person. Rousseau's opinion about the syllabus (curriculum) is that there will be no definite reading syllabus for the child. Nature will be the teacher and the child will acquire (collect) knowledge from the Natural World through observation, experiment and through practical experience.

The main idea of Rousseau's teaching method is Negative Education, the characteristics of which is Sense Training and Teaching by the revelation of Reasoning Power.

The contribution of Rousseau in the world of Education is unquestionable. He spoke against stereotyped education and spoke for Child Centric Education. Today he is immortal to all.

Froebel : We hear the footsteps of the Upanishad of the ancient India in the Life-Philosophy of Froebel. There exists a power in all life and nature in this world. This power (God) has confined all the happenings in human life to one Law. (He believed head and heart this power.) Everything in this world has been created from this only one powerful God.

According to Froebel the objective of education is to help the child in the realization of spiritual unity in the child's own soul and in the unfoldment of all the Latent inborn qualities and possibilities in a child. To him the nature and aim of education is—manifestation.

Froebel has talked about the teaching of different subjects in order to fulfil the objectives of education and realise the real truth of life. He has spoken of teaching Language, Nature-Study, Mathematics, Pottery, Drawing, History, Geography, Science etc. He has given special importance to Dance, Rhymes and Songs, Story and Handicrafts.

Froebel introduced 'Gift' and 'Occupation' and concrete (Material) things and spoke of presenting these to the children as symbols. He spoke of teaching according to the child's interest and demand by utilizing child-activity, i.e., child's self activity.

Another characteristic of Froebel's teaching method is to foster social co-operative attitude in the child's mind. So the educational institute, according to him, will be a reflection of the society or a miniature society.

Froebel named his institution as Kindergarten which means 'Children Garden'. He compared the children with saplings and the teacher as gardener. Just as a gardener carefully nourishes a sapling to grow up with proper materials, the teacher will also help the child to unfold rightly with careful affection in the suitable congenial atmosphere in the school.

Mahatma Gandhi :

Gandhiji's educational Philosophy is influenced by his Life Philosophy and Social Philosophy. He described Education as the means to search for truth and for self realisation. He means to say that education is the all round drawing out of the best in child and man—body, mind and spirit. He says the aim of education is the manifestation of the divinity in man. He accepts this objective as the prime objective of education. Over and

above this, in Gandhiji's objective of Education the successful co-ordination in the aim of development in individual life and social development is noticed.

Gandhiji was specially inspired by the spiritual ideals of ancient India and the first word of his philosophic ideology was the realisation of Truth. In his opinion the only way to get Truth in life is Non-violence. The Educational Philosophy of Gandhiji is based on this Truth and Non-violence. If we analyse the Principles of Gandhiji's education, we will find the following characteristics :

(1) Non-violence, (2) Self control, (3) Activity, (4) Creative works, (5) Self-reliance, (6) Feeling of Equality, (7) National heritage, (8) Realisation of Truth.

He introduced Basic Education, the chief characteristics of which is Education through Work-Centre or activity so that it is possible to build the students self-dependent. This is in one way Psychological and Social-Scientific Education which has brought about a great change in the Education System.

Poet Rabindranath Tagore :

From the point of view of Philosophic thought Rabindranath was an idealist. He believed in the absolute spiritual power that was at the root of all creation. The Upanishad was at the root of his this belief.

Rabindranath's Life Philosophy has been deeply reflected in his Educational Philosophy. From the point of view of Philosophic thought he was an idealist and again as he had intimate relation with Nature we can call him Naturalist. He spoke of giving education to the children in lap of the open Nature. So for this reason we can call him Naturalist.

According to Rabindranath the objective of Education is to make real man. He has tried to co-ordinate between the sociological and individualistic objectives of education. In his opinion the chief objective of education is the manifestation of Independent Thinking Power. He has also said that another objective of education is the realisation of the Divine Soul (Paramatma). So the spiritual and Moral feelings have received top priority in the education planning in Santiniketan.

The main principle of Rabindranath's Education Method is to give freedom (liberty) to the child. Activity is the main theme of Education System. Rabindranath believed that the character of the child would be well built up through the Co-curricular Activities like games and Sports, acting in dramas, cultural functions, travelling etc. So he made arrangements of all these activities in Santiniketan.

We come in touch with a novelty in Rabindranath's Education-Thoughts, which enables the learner in the all round manifestation (unfoldment) to become a real man.

The Education Method of Madam Maria Montessori

The Life Philosophy of Montessori is to serve the distressed as a medical practitioner. She dedicated her life in the service of the suffering humanity. Her prime objective in life was to do good to man. With this attitude of service she dedicated all her life to the reformation and development of Teaching Method.

In the opinion of Montessori the assistance which is rendered for the unfoldment of the natural life of a child is Education. She believed in Individualism—so according to her opinion the chief objective of education is to lead the child in the path of full revelation as per the child's capability quite individually (separately). The most important part of Montessori Education is the Teaching Method. Her Teaching Method is mainly based on three fundamental principles. They are :

(1) Sense Training, (2) Auto Education, (3) Liberty.

Montessori invented Didactic Apparatus (Educational appliances) for the exercise of Sense Training and got extraordinary (uncommon) results with their practical application in case of the children.

She spoke of three subjects for the children. These are Writing, Reading and Arithmetic which are commonly known as 'Three R's'. She included Handicraft in the curriculum. Besides this, she laid stress on some habits and skills earning education necessary for life.

In the Montessori Method the role of the teacher is passive. She mentioned Directress in place of Teacher. The role of the Directress is to observe and to help the child on necessity.

The children are the part of God and the educational institution is the Temple to Montessori. She achieved uncommon success by applying Didactic Apparatus in the practice of Sense Training and this Method is termed as Montessori Method. This method achieved special popularity and this Method is cordially accepted in various countries of the world.

3.2 Objectives

The learners will be able to acquire the following skills by reading the present unit.

- (1) The learners will be able to discuss how Philosophy influences Education.
- (2) They will be able to explain the main objectives of Idealism, Naturalism, Pragmatism Educational Philosophy.
- (3) They will be able to analyse how far Rousseau's Education Method is applicable in the present age.
- (4) They will be able to determine how much Froebel's Teaching Method is usable in child Education
- (5) They will be able to make a chart by mentioning the characteristics of the Teaching Method of Froebel and Montessori in the field of child Education.

3.3 Education and Philosophy

In the modern age a separate branch of knowledge has been emerged in order to discuss about child Education. This science is called Science of Education. In the modern sense Education is the process of Life Enfoldment of a child or a man. The child is immatured at the time of birth, but the child has some possibilities in it. The process which helps the inborn possibilities in the child to manifest is called Education. Philosophy helps to realise the real significance of life and so Education originates to spread life. Now we can come to the conclusion that Education and Philosophy are co-related to each other. So far this reason Philosophy of life has been transformed into Educational Philosophy in the field of Education. Educational Philosophy determines the objective of Education and Education helps to go ahead in the path to reach the goal, and makes life crowned with success.

Educational Philosophy

Generally we get two kinds of theories in philosophy—one is Materialism or Naturalism, and the other is Idealism Over and above this, another kind of theory (doctrine) is there in the modern age. This theory is set up on the co-ordination of two

other theories—which is called Pragmatism. These three kinds Life Philosophy have been manifested in a parallel way in three kinds of Educational Philosophy in the same name.

3.3.1 Idealism, Naturalism, Pragmatism

Idealism is the oldest of all the Philosophical theories (doctrines). According to this doctrine there is another world besides this materialistic world, which can be called as ideal world or spiritual world. The lord of this world is God. Man is only a part of God. The aim of humankind is to realise God or Brahma.

The worth mentioned persons applying Idealism in the field of Education are Plato, Kant, Pestalozzi, Froebel, Rabindranath and Gandhiji. The Idealist Educational Philosophers think that man is born with the spiritual self. His real self realisation will take place through education. As a result he will go ahead to be in union with Brahma. So they have specially stressed on self realization as the objective of Education. In their opinion, Education will give nothing new to the child, Education will help to manifest the latent possibilities in the child. As Swami Vivekananda has said—‘Education is the manifestation of the perfection already in man.’

According to the opinion of the Idealists the moral, intellectual and idealistic life of the learner will have to be developed through the subjects of study. The Idealist Educational Philosophers have said nothing new about the Method of Education. According to the Idealists’ view the ideal teacher is he who has complete self realization. He will be as idealist as the ancient Indian ‘Gurus’. The teacher will influence the learner with the influence of his personality. His work is not to give knowledge but to be the assistant (guide) and director.

In fine, it may be said that the Idealistic Education-Philosophers have influenced the different fields of education with their thoughts. If their theories are aptly applied in the field of education, Education will be all perfect and it will lead man to Ideal life and Social system.

Naturalism in Education

As an alternative of Idealistic Philosophy, the influence of another Philosophic view which is seen on Education is Naturalism. This Philosophic theory is also considered to be contrary to Idealistic Philosophy, According to this theory, the world that we see is real and all other things are unreal. There is nothing else beyond this material world.

The application of this Philosophic thought in the field of education is known as Educational Naturalism. Aristotle, Herbert Spencer, Froebel and others applied this theory in the field of education. But Rousseau is extremist in this matter. He gave special importance to this theory. Rabindranath also gave importance to Nature.

Their main opinion about the objective of Education is to assist in self-expression and self-preservation. This is chief objective of education that the child will receive education according to the child's own interest and nature—this is the principal objective of education. The society will have no interference on the child. The society does not pay any importance on the higher moral values of life.

They said about the Teaching Method that there is no much need of the text books. The child will be allowed to learn through experience. They have paid special importance on learning by doing. Besides this they have paid special attention to spontaneous spirit of some Naturalist-children and spoken of the play-way Education and the Education in the open campus.

The Naturalists spoke of a new thing about the duty of the teachers. According to them the role of the teacher will be that of a spectator, they will only assist in the natural unfoldment of the child. The teacher will provide appropriate opportunities to create such an environment in which the child will receive education naturally.

Pragmatic Philosophy of Education

The main word of Pragmatism is utility. The Pragmatists think that man himself builds his ideals in life through active works. The experience that is beneficial in practical use is true and acceptable. Special importance has been laid on Experimentation in Pragmatic Philosophy of Education. John Dewey, Kilpatrick etc. are the follower of this theory.

The Pragmatists are believers in Democratic social system. The principal theme of Pragmatic Philosophy of Education is that the life of man has been judged in the light of direct experiences and necessity in this Philosophy.

The promoters of this Pragmatic Philosophy of Education did not determine any definite rule relating to the course of studies (syllabus). In their opinion the syllabus will be flexible. It means the syllabus is to be framed in the light of the child's own characteristics and the demands of the society. No curriculum is fixed for a particular time or a society.

They have introduced new course of thinking regarding the Teaching Method. In their opinion Education will be through direct Activity. They have laid special emphasis on

Activity-Centred Education. The child's education will be performed through Individual Activity. The Project Method or Problem Solving Method of which we speak in the modern age is the contribution of the Pragmatists.

The Pragmatists have spoken about the responsibility of the teacher that the teacher's duty will be to create an ideal life-environment for the learner.

Last of all it may be said that the Pragmatic Philosophy of Education has influenced the field of Education in various ways. Pragmatic philosophy has emphasised the necessity of the society in the field of Education selecting Democratic Life Style as ideal. In addition to this Pragmatic Philosophy has created a new and successful movement by introducing Activity centric Ideals in the Teaching Method.

Check your progress :

Answer the following questions

1. Ascertain the relation between Education and Philosophy.
2. Discuss what you mean by Idealistic Philosophy?
3. What is the principal idea of Naturalism in Education? Mention the names of the supporters of Naturalism in Education.
4. Explain the chief characteristics of Pragmatic Philosophy of Education.

3.3.2 Application of the above mentioned subjects or topics—In the Philosophic thought of Rousseau, Proebel, Gandhiji and Rabindranath

Rousseau brought about a movement in the traditional thinking of the eighteenth century. Rousseau's thinking influenced not only the social system of that age but also the system of education. So in the modern age Rousseau's Education-Philosophy has been given the top most place in the history of thinking.

In Rousseau's Educational Philosophy his Life-Philosophy and Society-Philosophy have been directly reflected (applied). In his opinion only Nature is fit for being the teacher of man. The unfoldment of all the latent possibilities in man is possible only in Nature. His thinking (theory) struck at the root of the Education System of the then age. He thought that Medieval Education System only chains man, it can not bring the broadness of mind. So he spoke of the Education in keeping with the nature of the child. Rousseau has

expressed this opinion about Education System theory in his novel, 'Emile'. Centering this imaginary child Rousseau has analysed the different aspects of the Theory of Education nicely. The Education that is acquired through the objects of Nature and realisation of Beauty is real Education, and the Headmaster of this Education System is Nature.

According to the ideals of Rousseau the child will receive Education from three kinds of teachers. They are Nature, Man and Objects. When the influence of these three powers receive a consolidated (compact) form, we call man well educated. In going to describe the Nature based Education Rousseau has used Nature in three senses. They are (1) Psychological Nature, (2) Physical Nature and (3) Biological Nature.

1) Psychological Nature :

Rousseau has laid importance to the psychological characteristic of a child in his Naturalism. He has said that the education of a child will be given according to the child's instinctive nature (inborn aptitude), that means, child's instinctive demand, desire and emotion. Here he means Nature as Psychological (Mental) nature. There was scope for the unfoldment of child's Psychological aptitude in the Education-system of the past. Over and above this some burdens of knowledge were loaded on the child. The teachers had to carry out those responsibilities. As a result, the child was taught (given education) according to the need of the society. The cultivation (civilization) of mind performed through this system of Education was only for Slavery. He has said, "Civilized man is born, lives, and dies in a status of slavery." Rousseau has first said, child is not for Education, Education is for child. Education is to be made according to the nature of the child. The teacher will make all arrangements for the child's education by observing the child's demand, desire, interest and all other things.

2) Physical Nature :

Rousseau regarded the Natural Environment best of all for the education of 'Emile'. Urban life has little touch (communication) with Nature. So he regarded the Rural Environment as the fittest place for Education. He has said, in order to give proper education to the child, the scope for free mixing with the World-Nature is to be given to the child. The child will earn experience with the direct acquaintance with trees, rivers, beasts, birds etc. and this will be the primary step of the child's education. Nature will be his suitable and only teacher.

3) Biological Nature :

According to Rousseau, the child is born with some Biological urges and the child's this Biological stage goes ahead towards perfection by crossing different stages. The social environment in the different stages of the child's life-unfoldment has a great influence. Rousseau has said that man lived in the Natural State before the creation of the society. Man was then free from the influence of the society. In the opinion of Rousseau, just as the child unfolded in the Natural State as per rules of its Biological self, so the child will unfold itself in the present time. The child will be controlled (restrained) by its Biological demand, not by the social impact. So the child is to be removed from the social environment to Natural state.

According to Rousseau man receives three kinds of education each separately from Nature. Rousseau means to say by 'Education according to Nature', these three kinds of Nature.

The objectives of Education

The objective of Education is man's all round natural manifestation through which he will be in the acquisition a well co-ordinated (integrated) natural living (maintenance) of life. He says, "To live is not merely to breathe. It is to act, to make use of our organs, senses, our faculties and all those parts of ourselves, which give us the feeling of our existence." In his opinion the definite objectives of education are :

- (1) To get the child active.
- (2) To assist the child to make use of organs.
- (3) To assist the child to make use of senses
- (4) To assist the child to make use of mental powers properly.

The person who can be aware of his own existence by directing his physical limbs and mental powers smoothly in compliance with the thoughts of Rousseau, is the owner of perfect living. The objective of Rousseau's education is to make a man possessing such a perfect life. Besides this, Rousseau has given directives in the various phases regarding the objectives of Education.

Rousseau's Proposed Curriculum :

Rousseau opposed the stereotyped (traditional) curriculum. But he himself did not frame any well destined curriculum. In the curriculum framed by him special importance has been attached to the activity of the child. The children will collect knowledge from the natural world through observations, experiments etc. He arranged the reading of only 'Robinson Crusoe for Emile. So he included physical exercise, handicrafts and vocational education in the curriculum.

Rousseau's Method of Teaching :

As a direct result of Rousseau's Education Theory, his Teaching Method has been created. In criticizing the traditional Education-system, Rousseau has pointed out one main defect—that is Positive Education. The chief conception of this Education-Method was that children are dishonest by nature. Their dishonest nature is to be changed through Education. According to Rousseau's opinion, the child is burdened in the immatured stage. The education in which the child is forced to discharge the duties and responsibilities like the adult is called Positive Education.

Rousseau spoke of Negative Education in place of Positive Education. He did not mean the absence of Education while talking Negative Education. He wanted the change of traditional thinking. The education in which the materials of earning knowledge are made suitable prior to the knowledge in Education is Negative Education in his opinion. Rousseau thought that the manifestation of intelligence depends on the revelation of the sense organs. So he laid special stress on the sense exercise. The main word of his method is Negative Education the characteristic of which is the refreshing of the sense organs and giving education after natural unfoldment of the reasoning power. He has said that the education which helps to make suitable to collect knowledge by refreshing the knowledge collecting materials or knowledge through sense organs before directly imparting knowledge is Negative Education.

According to Negative Education the child is to be allowed in the open natural surroundings by giving the child unrestricted liberty. The child's mental, physical and moral education will be done in the influence of nature. Nature will be the teacher in this Teaching Method. The child will get the reward or punishment from Nature, such as if the child touches fire, its hand will be burnt. But after this the child will never touch fire. If the child gets drenched in rain water, it will suffer from fever. So the child will have to be confined in the house. The child will not have these sorts of experiences. The child itself will earn

these experiences and that will be the child's proper education. Rousseau has termed this as 'Discipline of Natural consequences' Rousseau has applied this method in the field of education.

Another characteristic of Rousseau's Teaching Method is the introduction of various kinds of Teaching Method for the children of different ages. He has divided the teaching life of Emile into some stages according to age and enfolded the characteristics of the teaching method in one by one stage. Rousseau first spoke of the formation of Education Plan according to the stage of this life-enfoldment.

First stage (from one year to five years) :—In the opinion of Rousseau the sense organs of the child become enfolded (manifested) at this age and the child is acquainted with the outside world. At this stage special importance is to be given to his physical development. If the physical development of the child is not done in this stage, the teaching method will not be possible for successful materialisation. He thinks the immoral (dishonest) trend in human mind gives rise to weak health. He says, "A child is bad because he is weak; make him strong and he will be good."

At this age father will be the ideal teacher of the child and mother will be the child's worthy nurse. They will not interfere in the unrestricted liberty (freedom) of the child in any way. The child will not be punished. Rousseau speaks of the sense training in the natural way at this stage. So Rousseau thinks of the rural environment to be of specially advantageous for the education of this age, because without natural environment the child cannot successfully fulfil his spontaneous (natural) demand and inborn aptitude.

Second stage [from 5(five) years to 12 (twelve) years] :—In the opinion of Rousseau the life of the child at this stage is very important. In this stage the education system should be directed by two main principles. First principle is Negative Education and the other is Moral Training. In this stage the child will not be acquainted with books and the child's mind will remain inactive. The Moral Training (Education) will not be applied forcibly. The child should be kept off all sorts of social restrictions and taken to the pure rural life environment so that the polluted urban life environment may not affect the child in any way. Rousseau particularly emphasised on Physical Exercise in this stage. He has said—in this stage the objective (aim) of education will be to assist the child to build up the life as a healthy and strong (stout) man.

Third Stage [from 12 (twelve) years to 15 (fifteen) years] :—According to Rousseau this stage is the child's acquisition of knowledge. The child's inquisitiveness

becomes very strong in this stage. So the social rules and customs are to be taught to the child during this stage. The child is to be given knowledge in various subjects to satisfy his inquisitiveness. In fact, the Positive Education of the child starts in this stage.

In his opinion, knowledge is to be imparted in the natural environment centering the inborn aptitude (or interest) of the child. Geography is to be taught by observing the natural things like fields, meadows, rivers, trees etc. Again, History will be taught through short stories, travelling etc. Literature will be taught through dialogues (conversations).

Fourth State [From 15 (fifteen) years to 20 (twenty) years] :—So far, Emile's education was Sense Training Centric. The objective of education in the fourth stage is the unfoldment of all human feelings, to make the child fit or suitable for life and to arouse sympathy for others. Besides this, the objective of education in this stage is the revelation of moral and emotional life. All education will be given through direct experience. Encouragement will have to be given in good works. In this way, the child will learn to understand which work is good and which work is bad.

Rousseau has given importance to the manifestation of various social qualities among the learners through social communication. In the fifth part of Emile Rousseau has made some comments on the education and marriage of women. In this stage while discussing about the education of women, he gives out quite contradictory theory. He is not in favour of the Women Education, he only speak of giving training in various household works to women.

Rousseau in his Education Philosophy had laid stress on the responsibility of teachers. One of his important speech about the teacher is that a teacher will take the responsibility of the learner's complete whole life education.

The contribution of Rousseau in the field of modern education is called up with a grateful heart, because it is he who first speaks of Child Centric Education. We can say undoubtedly that Rousseau has immensely influenced the modern Education thinking and method in various ways. His influence in the field of modern education is the greatest.

3.3.2 Federick Wilhealm August Froebel

Just as Froebel's Life Philosophy is influenced by the thoughts of the Idealistic Philosophers like Kant, Hegeland, so on the other hand it is influenced by the Theory of Evolution of the Scientists. He has co-ordinated these two contradictory thoughts in his

Life-Philosophy. We hear the echo of the Upanishad of Ancient India in his Life-Philosophy. A power exists in the whole World and Nature. This power is God who has united all the happenings of human life in one law. He believed this power (God) heart and soul.

This unit of Power is God. Everything has been originated from this God. God is at the root of all things. The source of all things is God. God exists in all things. “All things have come from the Divine unity and have their origin in Divine Unity.”—The Education of Man.

In the opinion of Froebel, the sole objective of human life is to realise this Divine Unity, this All Mighty God. His life philosophy was built up by keeping close relation of mind with nature.

According to Froebel, there has been a well defined flow in the development of creation. The development of each stage fully depends on the preceding stage for its complete development. The Life World and the Nature World—the whole creation have been following this Evolution. As example he says—just as all the characteristics of a tree are hidden in its seed, so all the characteristics of a full grown man lie dormant in a child. The unfoldment of all the traits takes place in an appropriate environment. This Life Philosophy of Froebel has a special impact in his Educational Philosophy afterwards.

Froebel's Educational Philosophy

Froebel's Educational Philosophy is totally influenced by his general Philosophy. In his opinion the objectives of education are of two kinds.

Firstly : The whole world is under the Law of single unit of Divine Power. The main power of the world is immortal God. The prime objective of human life is to realise the unity of the whole universe. If this is the prime aim of life, the objective of education will be to assist the child to realise this Divine Unity in his own soul.

Secondly : Froebel thinks that the child is born with all qualities. The aim of education will be the unfoldment of all these traits. Education is not the power to be burdened from outside, this will come from within the heart. The objective of Education is to help man in the realization of this theory.

So the chief characteristic of Froebel's Education-thought has been expressed in one word—Development or unfoldment. To him the nature and objective of education is

Development or unfoldment. He has given equal importance to the development or unfoldment of man and society and has made successful co-ordination of these two concepts.

Froebel has applied a well thought theory regarding curriculum to comply with the objective of his education. He spoke of giving education in schools in view of the realisation of ultimate truth in life. Such as,

- (1) **Language Learning** :—According to Froebel language is a signalic language through which the individual is united with the world. So he has attached importance to the language learning. He has laid more emphasis on speaking than reading, because direct communication will come through conversation (dialogue).
- (2) **Acquaintance with Nature** :—In Froebel's curriculum Nature-Acquaintance is an important subject. He says that the World of Nature has carried the signal of a great unity to the child.
- (3) Froebel has specially stressed on the learning of Mathematics. He thinks that Mathematics helps to find out the connecting link of unity with the universe by unfolding human power of reasoning.
- (4) **Clay Work** :—The child's self activity attains perfection by making clay things. The child gets the joy of creation by giving shape to various things with clay.
- (5) **Drawing** :—Froebel has included Drawing in the curriculum, because he believes child's knowledge becomes unfolded through Drawing and aesthetic sense of the child is also manifested.
- (6) Besides these, Froebel has spoken of the reading of History, Geography, Science etc. and suggested for the inclusion of these subjects after co-ordination.

He also points out the inclusion of Dance, Songs etc. in the curriculum and particularly mentions the inclusion of religious and moral education. He has included the physical labour in the curriculum of his Educative utility.

Froebel's Education Method :

Froebel has introduced some special kinds and a particular number of concrete objects. These are his famous 'Gifts' and 'Occupations'. The gifts of Froebel are presented to the children as having some special qualities from the side of shape and as symbols of

particular things. Such as, in Kindergarten ball is not presented to the child as the thing of play as a whole, nor as to create the idea of a circular thing but to create the conception of unity as a whole. So cube or the thing of cubical thing is given to the child to create just the opposite conception (idea) of a ball in him and the child is given a cylindric thing (a thing like a cylinder) to create a third idea (concept) by uniting the two contradictory (opposite) ideas already mentioned. The famous system of assembling the children in a circular form in Kindergarten is introduced to form the idea of all round Divine unity in the child. Besides this, while playing with these gifts, the child receives the idea about cube (solidity) of a thing and from this the child forms the idea about Mathematics.

After getting the gifts, occupation begins. There is a close relation between gift and occupation. The child gets the opportunity to unfold him through occupation. These gift and occupation help the child's physical and mental development. Froebel means by occupation various types of handicrafts. He has elected making of different kinds of thing and paper, wood work, weaving, drawing pictures etc. as occupation.

Froebel opines that the child will learn through his natural interest and demand. The child will be given education through spontaneous joy. All children are active by nature. He calls this activity as self activity. The ideal teaching method will be such as the child's self activity will be utilized in the direction of teaching process.

The self-activity of child is revealed through games and sports. Froebel is the first Educationist who speaks of Education through games and sports (Play-way in Education). Plays give the child joy, liberty, satisfaction and contentment (peace). Play holds the source of all that is good. So in the Kindergarten Method Froebel has given so much importance on plays.

Another characteristic of Froebel's Teaching Method is teaching through Rhymes and Songs. The child loves mother and tune and melody so he has divided songs in two divisions—mother's song and play song. He speaks of imparting education through seven mother's songs and fifty play songs. At the time of singing these songs the movement of the child's limbs are properly done and arrangement of Calisthenics (Melodious group dance) with songs like Physical Training i.e., P.T.) is also arranged. Three kinds of materials are used for the development of the child's personality in Kindergarten Teaching Method.

(1) Nursery songs, (2) Mother play, (3) Gift and occupation. The song of 'Mother Play' helps the movement of the child's limbs and the child gets inspiration (encouragement) to work unitedly in a co-operative way.

The most effective material in Kindergarten is, of course, story. Stories influence everything from the minds of the children to their language, song, play etc. The story helps specially in the rise of the imaginative power of the child. Froebel has attached immense importance on the handicrafts of the child and handicrafts has occupied a remarkable place in Kindergarten curriculum. The opinion of Froebel is that the unfoldment of creative talent takes place through the handicrafts.

Another characteristic of Froebel's Teaching Method is to bring in society based co-operation in the children. Froebel is the pioneer who has tried to make the school a society. He says, The school will be reflection of the society. Froebel's school is a Miniature society.

Froebel has named his school as Kindergarten which means 'Children's Garden'. He has compared the children with the saplings and the teacher with the gardener. Just as the gardener helps the saplings to grow up with care, so the teacher helps the children rightly in their all round development in an appropriate environment.

In a word, Froebel's system of Education is the symbol of Modern Education. Whatever importance is attached to the child's own characteristics in the Modern Education, is all the gift (contribution) of Froebel,

Gandhiji's Educational Philosophy and objectives of Education :

Gandhiji's Educational Philosophy is influenced by his Life-philosophy and Society-philosophy. He has described education as the means of Truth finding and self realisation. He means Education as "All round drawing out of the best in child and man—body, mind and spirit." He has said, the objective of education is not based on material things but to develop the divine power in man. He has accepted this objective as the prime objective Education.

He has also attached special importance to citizenship education. He thinks that every Indian averse to industry (labour) will have to be learnt the lesson of the dignity of labour. He has emphasised on the work centric Education. This type of education will give firmness in education. Their economic foundation will be strong.

He has accepted education as the means of social uplift. That Education will bring prosperity to all man was the desire of Gandhiji so the successful co-ordination between the development of individual life and social progress is visible in the objective of Gandhiji's education.

Mahatma Gandhi

Gandhiji is known to us as the chief freedom fighter and social reformer of India. But he is renowned as one of the greatest teachers of the society. He has realised that the necessity of mass education is part and parcel of India's political freedom and so Gandhiji accepted the task of solving the problems of education as a part of political programme of works.

Gandhiji's Life-Philosophy

Gandhiji's education philosophy is the reflection of his Life-Philosophy. He was deeply impressed by the spiritual ideals of ancient India and his philosophic doctrine is originated from the ancient Indian Philosophy. The main idea of his philosophic opinion is the realisation of Truth which does not mean any particular information or knowledge. Truth is to be realised with all self and reflected in every thought and action (behaviour). In his opinion, Truth is to be attained through ideal leading of life. According to Gandhiji the only way to achieve truth in life is non-violence. Gandhiji's educational philosophy is based on this truth and non-violence.

If we analyse the educational Philosophy of Gandhiji, the following characteristics are found out. They are : (1) Non-violence, (2) Self-control, (3) Activity, (4) Creative work (Creativity), (5) Self-reliance, (6) Equality, (7) National heritage, (8) Realisation of Truth.

Basic Education

Mahatma Gandhi is the founder of Basic Education which is described as his last and greatest contribution to the countrymen. The matter inadequacy and failure of the education system introduced in the British ruled India inspired Gandhiji to originate this new Education-project. A conference of Basic Education was held at Seagram in 1945. Everybody accepted this Basic Education in this conference. Everybody thought that the social and economic change would take place with the help of this Basic Education and a new life would start. Then Basic Education was known as 'Nai Talim' (New Education Plan). Gandhiji spoke of four stages of education in the Nai Talim Basic Education Plan. They are :

- (1) Pre-Basic Education [For the learners below 7 (seven) years].
- (2) Basic Education—For learners from 7 (seven) years to 14 (fourteen) years.

- (3) Post-Basic Education—For the learners above the age of 15 (fifteen) years.
- (4) For the Adults.

Curriculum

Work Centric Education is given importance in every stage. The curriculum which Gandhiji pointed out for inclusion in Basic Education are as follows :

- (1) **Basic Craft** : The craft which is associated with the local social life, such as Spinning, Weaving, Agriculture, Metallurgy, Carpentry etc.
- (2) Mother tongue (Vernacular) will be the medicine of education.
- (3) Arithmetic which is essential in daily life.
- (4) Social Studies.
- (5) General Science—Usable knowledge in the different branches of science.
- (6) Art and Music.
- (7) Domestic (Home) Science—Only for Girls.

The Method of Basic Education

The first novelty in Basic Education is the work centered Work Programme. A craft will be there in the centre of Basic Education Programme. The learners will learn the rules of other study-lessons through the performance of that particular craft. This method is known as Correlation-Method.

As for example, Spinning and Weaving are Central Craft. The learner is to do works of various types to perform this craft. Such as—the land is to be made suitable for cultivation, the cotton-seed is to be sown, the cotton is to be spun, that thread is to be dyed, the thread is to be woven to cloth, the cloth is to be designed etc. While doing these works the learners acquire knowledge in various relevant things. While tilling the land, they learn the nature of the soil, the qualities of the soil of different countries, what kinds of grains grow in what kinds of soil and many other information relating to Geology and Geography. Likewise when they cultivate cotton, they acquire knowledge on various things directly about plants, leaves, flowers etc. and in this way they also study Botany. When they learn how to weave clothes they read History, Sociology, even some portion of

Psychology. When the learners make the designs on the clothes, they are acquainted with Art and practise aesthetics. They have to make mathematical calculation how much cotton will produce how much thread and how much thread will produce now many clothes etc. As a result they learn Arithmetic. Their acquisition of knowledge in these things is helpful in learning language.

In this way the learner earns necessary knowledge through the correlative process of studying language, Arithmetic, Geography, History, Sociology, Economics etc. while performing a central industry.

The Basic Education begins at the age of 7 (seven) and lasts upto the age of 14 (fourteen). When Gandhiji planned this Education, there was no arrangement of Primary Education in India, not to speak of Vocational Education. Gandhiji thought that if the System of Education was arranged through a particular industry, the expenditure for the industry would be met by selling the products out of the relevant industry and the children would be able to learn a profession for the future. In this way he wanted to make the educant self-sufficient.

As a result of teaching through industry, this Basic Education becomes spontaneous and joyful. As the child learns through practical experience, this system of education becomes long lasting and fully helps to unfold the individuality of the child. It also develops the self confidence of the child and everybody possesses the social qualities like co-operation, self-sacrifice, love for friends etc. through collective works. Besides, this system of education helps to create self-dependence, honesty, self control etc. The need and importance of teaching through Mother Tongue have been admitted in this Education System.

The Education thought of Gandhiji has brought about a great change in our Education System. This system of Education is both Psychological and Social Science based. Undoubtedly, the Education System of Gandhiji is much more practical than the traditional Bookish Education. In fact, this education is education of life through life.

It cannot be denied that there has been much criticism in about Gandhiji's Basic Education. Still it can be said that the enterprise of Gandhiji to build up exploitation free classless society through non-violence is uncomparable.

3.3.2 Great Poet Rabindranath Tagore

Through Rabindranath Tagore is renowned as the great poet all over the world, he has enough novelty in his contribution in the field of education and his famous creation 'Viswabharati' at Santiniketan has achieved a concrete shape of Progressive Education Project.

Rabindranath's Life Philosophy :

Rabindranath was an idealist from the Philosophic flow of thinking. He believed in the existence of all pervading Divine power at the root of all creation. The Upanishad was at the root of this belief. He specially realised the close relation between man and nature. He was a lover of man. He saw God in man. Rabindranath had firm faith that whenever man would heartily hanker after God, he would find the path shown by God. The sole objective of man's life long meditation is to find that 'Param Purush' (Supreme Soul).

Rabindranath's Educational Philosophy :

Rabindranath's Life-Philosophy has been deeply reflected in his Educational Philosophy. From the point of philosophic thinking he was an Idealist. Again, we can call him Naturalist as he had close relation with Nature. He spoke of giving education to the children in the open space of Nature. The children will receive education amidst the intimate relation with Nature. We can say for this that Rabindranath was a Naturalist. The chief characteristics of Rabindranath's Educational Philosophy are as follows :

- (1) **Man and close relation with Nature :** According to his opinion man has intimate relation with nature. Child's body and mind are well formed in contact with nature and the child learns to realise the Supreme Soul. So being inspired by the ideals of ancient Indian 'Tapoban' based education he set up Santiniketan.
- (2) **Aesthetic feeling :** Rabindranath was the Worshipper of Beauty. In his opinion the chief function of education is to get the child acquainted with the world wide joyful flow of aesthetic appreciation.
- (3) **Liberty :** Rabindranath was in favour of giving education to the child through liberty and joy. There will be no problem of maintaining discipline if the child is giving boundless liberty of work in stead of strict bindings and restrictions. He firmly believed that this method would cause the manifestation of the child's power of thinking and reasoning.

- (4) **Self-expression :** There will be scope for child's self-expression through education. Rabindranath thought that the system of education would be such so as to have the opportunity of the revelation of creative talent in a child. In his opinion the unfoldment of the child's mind takes place in the creative works like drawing, art, dance, music, sculpture etc.
- (5) **Human love :** Love to humanity occupies an important place in Rabindranath's educational Philosophy. All men are equal to him. So unity (integrity) and equality gets priority in his Education-System.
- (6) **Indian Culture :** There is no attempt (trend) to imitate the foreign element in Rabindranath's Education-Plan. He had firm faith in Indian heritage and included Indian culture in his Education Method.
- (7) **Co-ordination of Eastern and Western Culture :** Though Rabindranath had firm faith in Indian heritage, he tried to co-ordinate the Eastern and Western culture in his Education-Plan. Modern Science has been given the top place in his Education System.
- (8) **Female-Education :** Rabindranath believed that men and women should have equal rights in Education. The women should be given education according to their need. The teaching subject of women would be keeping home peace and cleanliness.

Rabindranath and the objectives of Education :

According to Rabindranath the objective of education is to make a real man. He tried to co-ordinate between the Socialistic and Individualistic objectives of education. He thought that the objective of education is the enfoldment of independent power of thinking. In his opinion the education which awakens our power of intelligence, activates it and frees our mind from ill thoughts, can only make an end to all sorrows and sufferings. One of the main aims of education is to awaken the scientific outlook in the learner. Rabindranath spoke of taking care of the learner's health. So in his education plan he has given provisions for games and sports, dance and music in the open space of nature.

In Rabindranath's opinion, the objective of education is to realise the Supreme Soul. So the creation of spirituality (Divinity) and moral values has been given importance in education plan.

The prime belief of Rabindranath is that the revelation of Supreme Brahma takes place through man. So he thought that the child is to be taught the feeling of fraternity and social feeling from his childhood. the objective of education will be the simultaneous unfoldment of individual personality and social feelings. Rabindranath believed firmly that the process of teaching would be much easy if the relation between the teacher and the taught is sweet.

Rabindranath's main thinking on his Education Method is to give freedom to the child. He has given importance to the observation of self-control simultaneously with liberty (freedom).

Rabindranath was dead against the teaching to the child confining him to the four walls. He paid importance to education by keeping intimate relation with nature and by co-ordinating with work through travelling. Activity is the main theme of Rabindranath's education. He believed that the character of the learners would be well built through the co-curricular activities like games and sports, acting, cultural festivals and functions, travelling etc. Rabindranath is immortal for uniting whatever is good in Western Industrial science with Indian Industry and creations.

Curriculum

Rabindranath wanted that the curriculum needed to be framed touching all aspects of child's life. The child would have to be taught Language, Literature, History, Drawing, Art, Dance, Music, Drama and everything to make a child complete man. According to him the medium of education should be mother tongue. He said that mother tongue is as good as mother's breast food in education. Rabindranath paid importance to the inclusion of Sanskrit language, the Ramayana and the Mahabharata in the curriculum so that the learner might be acquainted with the Indian culture. The rural development works has acquired an important place in the curriculum. He gave priority to the cottage industry like the Book-Binding, Carpentry, Drawing, Weaving etc. Although all these subjects got prominence in his curriculum, he did not at all neglect Western Science. In a word, Rabindranath's curriculum is based on experience and activity and it is much improved and practical.

Education-Method

Rabindranath did not refer to any particular education-method. According to him if the teacher is enthusiastic and qualified, he will be able to teach by creating new methods as per necessity.

3.3.3 Manifestation of Montessori Method

Life Philosophy of Montessori :

The profession which Montessori selected with the attitude of service as a Physician, turned into the service of the distressed in course of time. She devoted herself to the reformation and development of the teaching method all her life.

Education-Philosophy of Montessori and the objective of Education :

According to the opinion of Montessori, Education is the active help given to the expansion of the life of the child. She believed that every child keeps his individuality (separate existence) in respect of his inborn characteristics. He postulated that as every child is a neutral self with his own individuality, so the child is to be educated quite separately according to his capability. The chief objective of education is to lead the child to his all round development through proper education. The prime objective of Montessori's education-philosophy is to give importance of Individualism.

Curriculum of Montessori :

Montessori mentioned Writing, Reading and Arithmetic for the children. She included Hand-work in the curriculum. Besides this she gave much importance to the teachings of acquiring some essential necessary habits and skills like how to keep the child's body clean, how to wash clothes and how to keep the house neat and tidy.

Montessori's Teaching Method :

The most important part of Montessori's Education is her Teaching-Method. Her teaching method is mainly based on three fundamental theories. They are :

(1) Sense training, (2) Auto-Education, (3) Liberty.

Firstly, she laid special importance to sense training. She thought sense organs virtually responsible for mental deficiency. The incapability of sense organs causes deficiency. So the development of sense organs is to be made in order to give education to the child. So she invented various kinds of Didactic Apparatus.

Secondly, Montessori attached special importance to the self-enterprise of the child. What ever the child will learn with his own effort is real education. She thought that when the child would learn anything with self-effort, it would get much pleasure and the education would be meaningful to it. Her own invented Didactic Apparatus has been made in such

a way that the learners will be able to rectify their own faults. She has titled this type of education as Auto-education.

Thirdly, the main foundation of Auto-education is to give unrestricted liberty to the child. The objective of education is to help every child in self-unfoldment. The child is to be given boundless liberty. The teaching method of Montessori is based on three principles. Montessori mentioned three types of Practice Method in teaching the children upto the age of 6 (six) years.

(1) Montessori emphasised on the practice of teaching some common works useful to the livelihood of the learners. There has been the arrangement of teaching the children on cleaning the room, washing clothes, brushing teeth, cutting nails, shining shoes etc. She wanted to make the children self-dependent and for this she stressed specially on the training of day to day works.

(2) Montessori paid much important to the training of sense organs. So she invented various kinds of Didactic Apparatus. The unfoldment of the sense organs of the learners takes place with the help of these apparatus which cause the physical, mental preparation suitable for the training of the learners. This kind of apparatus contains different sizes of wood pieces, paper, furniture, various types of coins, wool of different colours, bell, cube, colour and water of different temperature etc. All these things help the children to grow right idea about shape, weight, touch, hearing and colour. The children are given to examine the water of different temperature in order to rouse the touching sense-organ. Sometimes sand-papers are also given to touch. Sound is created by keeping different quantity of pebbles in different boxes in order to rouse the sound-organ. Various colour of wood and wool are given for experiment to give an idea of colour. The Education system with the help of Didactic Apparatus is Psychology based.

(3) Writing, Reading and Arithmetic learning follow the Sense organs training. In Montessori Method Reading follows Writing.

Montessori mentioned three stages before teaching Handwriting practice. In order to get the learner acquainted with the shape of different alphabets, each alphabet is cut on the sand-paper according to shape and pasted on the board with adhesive and these are given to the learners to touch for feeling.

(2) When the learners touch the alphabets with their hands in this way, the teachers pronounce the alphabets for the hearing of the learners.

(3) In the next stage, with great care the learners are trained to get hold of the pencil. Montessori used the card to teach 'Reading'. Different words are written on the card. The words are generally the names of the things known to the child. The child repeats the words again and again and when the child can pronounce the word correctly, it is asked to place the card under the respective thing the name of which is written on the card. the same method is followed in giving training to write the sentence.

The opinion of Montessori in learning Arithmetic is that the idea (conception) of Arithmetic will be given to the child after the learning of Writing and Reading. Montessori spoke nothing new method in regard to teaching Arithmetic. She used object to teach Arithmetic and Long Stair to teach other tactics (strategies) over and above these, various kinds of handicrafts have been included in Montessori Method.

The role of the lady teacher in the Montessori Method is to direct the child in a right way. So in her method the lady teacher is called Directress. The Directress observes the work of the child and if necessary, she will help the child. The conception of Montessori is that the teacher has created a new era in the field of education.

To Montessori the children are the part of God and the school is the temple. She set up the children house to apply her Education-Method. The children were looked upon in this out look there.

The contribution of Montessori in the field of education is incomparable. Her Teaching Method is far more progressive than the traditional teaching methods. Today Montessori's Education-Method is cordially accepted all over the world and 'Montessori Method' has been specially popularised by this name.

Check your progress :

Answer the following questions :

1. Mention what Rousseau has pointed out about the objectives of education.

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2. Explain what Rousseau means to say about Negative and Positive education.

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3. Discuss about Froebel's education policy.
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4. Explain the importance of Gandhiji's Basic Education.
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5. Mention the characteristics of Rabindranath's Educational Philosophy.
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6. Discuss in brief the Education policy of Montessori. Determine the utility of Montessori Method in child education in the modern age.
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3.4 Unit Summary

Education and Philosophy are co-related in the medium of human life. For this reason only human life philosophy has been converted into Educational Philosophy at the end of education.

In the present age three kinds of Life Philosophy have been manifested. They are (1) Idealism, (2) Naturalism and (3) Pragmatism.

According to the Idealists there is another world besides the Materialistic world and that world is called Spiritualistic World (Divine World). The lord of this world is God. Froebel, Gandhiji, Rabindranath and others have applied Idealism in the field of Education. They postulate that the moral, intellectual, and idealistic life of the learner is to be developed through the curriculum.

According to the Naturalists the universe whatever we see is real and all other things are unreal.

Aristotle, Herbert, Spencer, Froebel and Rousseau are the supporters of this theory. Rousseau specially applied this theory in Education. According to this theory, the objectives of Education are as follows :

(1) Self-expression, (2) Self-Preservation.

His opinion about the Education Method is that the child will receive education according to its nature and through practical experience.

All the Pragmatists think that man builds his own life-ideal through direct experience. John Dewey and Kilpatrick are the supporters of this theory. In their opinion, the curriculum will be flexible (changeable) according to the need.

Rousseau :

Rousseau is a naturalist. He thinks Nature is only worthy of being a teacher. It was he who first stood against the medieval Teacher-Centric Education in the eighteenth Century and said that the child's education would be in keeping with the nature of the child that is, observing the child's demand, trend, interest, eagerness, will etc. the child will be at the centre of all education systems. This is called child Centric Education, the propagator of which is Rousseau. So Rousseau is called the father of Child Centric Education. He first postulated that the child is not for education, but education is for the child.

The objective of Rousseau's education is the all round manifestation in man—though which manifestation man will be the owner of living a normal life. According to his opinion there will be no particular curriculum for the child—the child will acquire knowledge from the natural world through observation, experiment etc. The principal idea of Rousseau's Teaching Method is Negative Education, the characteristic of which is Sense Training and teaching by nature unfolding of the power of reasoning.

The contribution of Rousseau in the field of modern education is undoubtedly matchless (in comparable). He has influenced the trend and method of modern education in various way.

Froebel :

We hear the echo of the Upanishad of ancient India in the life-philosophy of Froebel. Froebel believed that there exists a power in all life of the world and nature. This power is god and everything is created by this Almighty God.

Froebel opined that the objective of education is to help the child in the realisation of Divine unity in its own soul and in the unfoldment of all the inborn qualities and possibilities in its. In his opinion the nature and objective of education is—Manifestation. Froebel spoke of giving education on different subjects in order to fulfil his objectives of education and to realise the ultimate truth in life. He introduced Gift and Occupation in education and asked to present these as symbols to the children.

Froebel spoke of imparting lessons according to the interest and demand of the child by utilising its self-activity.

Froebel named his school as Kindergarten the meaning of which is Children's Garden. He compared the children with saplings and the teacher with the gardener. Just as the gardener helps to grow the saplings with care through suitable materials and environment, so the teacher will help to unfold the children rightly in the healthy and suitable atmosphere.

Mahatma Gandhi :

Gandhiji was greatly inspired by the spiritual ideals of ancient India and the main idea of Philosophical theory is the realisation of Truth. According to his view the only way to achieve truth in life is Non-violence. The Educational Philosophy of Gandhiji is based on this Truth and Ahimsa (Non-violence). Gandhi described Education as a means search for truth and self-realisation. He meant Education the all round of the physical, mental and divine (spiritual) instincts in man. He pointed out that the aim of education is the unfoldment of the inherent divine (spiritual) power in man. He accepted this objective as the prime objective of education.

Gandhiji's most remarkable contribution in education is the basic education. The chief idea of Gandhiji's Educational Philosophy is that the child is to be taught through work or activity. This Educational Philosophy is based on Psychology and Social Science which have brought about a great change in the Education system.

Rabindranath Tagore :

Rabindranath's Life-Philosophy has been greatly reflected in his Educational Philosophy. Rabindranath is an Idealist from the point of Philosophical thinking and again we may call him a Naturalist because of his intimate relationship with Nature.

As to the objective of Education Rabindranath's view is to make a real man and to manifest the free thinking power in man, which should be the main subject matter. Besides

this, he viewed that the objective of education is to realise the great soul. So spirituality (Divinity) and Moral values have topped the Educational Project in Santiniketan.

The main theme of Rabindranath's Educational system is that the child is to be taught through activity method and Liberty. He gave special importance to co-curricular activities as he believed that co-curricular activities help to build the character of the learner firmly.

Montessori Method Development :

The life Philosophy of Madam Maria Montessori is to serve the distressed. Her Prime objective in life was to do good to man. She devoted herself to reform and improve the teaching method with this attitude of service all her life.

Montessori believed in the Individualism in a child. So she asserted that the child is to be taught quite freely and individually according to the child's capability. Liberty is the chief characteristic of Education-thinking.

The most important subject of Montessori's Education is her Teaching Method. Her teaching Method is based on three principal theories. They are : (1) Sense Training, (2) Auto education, (3) Liberty.

Montessori invented Didactic Apparatus for the refreshment of senses and achieved extraordinary success by applying on the child. The child itself will learn spontaneously and joyfully through liberty—this was her principal objective of education. There will be no teacher in this method, instead there will be Directress whose role is to observe the child and help them, if necessary.

This novel method of teaching is renowned as Montessori Method which has earned much popularity in child centric Education and has been accepted cordially by different countries now.

3.5 Assessment of the unit

1. Who said about 'Gift' and 'Occupation'?
2. Who originated Didactic Apparatus?
 - (i) Froebel, (ii) Rabindranth, (iii) Montessori, (iv) Gandhiji.

3. Write short notes on :

(i) Kindergarten, (ii) Child Centric Education, (iii) Negative Education.

4. Answer the following questions :

(a) What is the main idea of 'Idealism Philosophy'.

(b) Which Educational Philosophy was John Dewey supporter of? What is the main idea of this theory?

(c) Discuss about the principal ideas and teaching method of Gandhiji's Basic Education.

3.6 Home task

1. Discuss about the Educational philosophy and Teaching Method of Rabindranath Tagore. Give your opinion about this novel Teaching Method.

3.7 Exercises

Answer the following questions :

1. Discuss how Philosophy influences Education.

2. Explain the principal objectives of the Educational Philosophy of Idealism, Naturalism and Pragmatism.

3. Analyse how far the Teaching Method of Rousseau is applicable in the modern age.

4. Analyse how far the Teaching Method of Froebel is useful in the Child Education today.

5. Prepare a chart mentioning the characteristics of the Teaching Method of Froebel and Montessori in the field of Child Education.

Unit 4 ☐ Child Centric Education

Structure

- 4.1 Introduction**
- 4.2 Objectives**
- 4.3 Child Centric Education**
 - 4.3.1 Conception about Child Centric Education**
 - 4.3.2 Characteristic of Child Centric Education**
 - 4.3.3 Its importance in Pre-Primary Stage**
- 4.4 Summary of unit**
- 4.5 Check you progress**
- 4.6 Assignment**
- 4.7 Exercise**

4.1 Introduction

The Education System that is directed on the basis of the capability, taste, interest, will, demand of the learner today is called Child Centric Education.

Rousseau is the originator of Child Centric Education. The two Educationists whose names are specially renowned in this context are Froebel and Montessori. The discussion on Child Centric Education remains incomplete if the names of Rabindranath and Gandhiji of our country are not mentioned.

In fact the beginning of the Child Centric Education the characteristic of which are found in the modern Education system, took place in the ideals of Rousseau. The characteristics of the Child Centric Education which are free discipline, activity, unrestricted liberty. Psychology basis creations, individual centric teaching method, the teacher and the taught closely related lessons, are the use of modern teaching apparatus.

The importance of the child centric education in the primary stage is boundless. Rousseau who first spoke of education in keeping with the nature of the child, asserted that the child is not for education, Education is for the child—that means the child will be at

the centre of education. We have the echo of this speech in Froebel, Montessori, Rabindranath and Gandhiji's utterances.

4.2 Objectives

The learners will be able to acquire the following skills after reading the present unit.

- (1) The learners will be able to say what 'Child Centre' Education means.
- (2) The learners will be able to explain why Rousseau is called the father of Child Centric Education.
- (3) They will be able to make the comparative discussion between traditional education and modern Child Centric Education.
- (4) They will be able to prepare a chart mentioning the characteristics of Child Centric Education.

4.3 Child Centric Education

The system of Education had been built up in the world and in our country India long long time ago. The Ashram Centric Education had been built up in the Vedic Age and the Aryan Sages (Arya Rishi) were the ancient preceptors (Gurukul).

The learners had to lead a strictly controlled life in this Education-System—that means they had to lead 'Brahmacharya' (Sense organs controlled life) with right earnest. It was the bounden duty to keep up rules and discipline. The disciples regarded and respected the preceptors thinking them to be god. They never disobeyed the preceptor. The order of the preceptor was the last word. The relation between the preceptor (Guru) and the disciple (Sishya) was very sweet, like the relation between father and son. Importance was given on the moral character of the disciple and the prime objective of education was to build the life of the disciple as a man having personality, responsibility and honesty. The main subject matter of education was the reading of the Vedas.

We have receded far from this state of education-system slowly. Afterward the Education System which grew up in the world and in our country, was Teacher Centred Education, that means the teacher was at the centre of education. In this Education System,

the child was considered as a miniature form of the elder and every thing was shouldered on the child. The will, demand, taste, interest, trend and nothing were not considered, one kind of injustice was done silently on the child.

Rousseau was first vocal against this traditional Education system in the eighteenth century. In his opinion everything in the name of education was burdened on the child forcibly. The child should be given education according to its will through freedom. The education of the child in keeping with its nature—that means in keeping with the child's demand, taste, interest, trend and will. It is Rousseau who first opined, 'The child is not for education, education is for the child.' The child will be at the centre of education, not the teacher. This is child Centric Education. He wanted the child education psychology basis.

Rousseau was the originator of Child Centric Education. We hear the echo of his theory in the education-thinking of the educationists like Froebel, Montessori, Gandhiji, Rabindranath and others.

4.3.1 Conception of Child Centric Education

In the modern Education, Child Centric Education means the child is at the centre of all systems of education. The system of education which is directed on the basis of the capability, intelligence, interest, taste, demand etc. of the child, is called Child Centric Education now.

In fact, the first starting of all the characteristics of Child Centric Education found in the present system of education, took place in the ideals Rousseau. From this point of view Rousseau is called the father of Child Centric Education.

Two educationists whose names are particularly worth mentioning in Child Centric Education are Froebel and Madam Montessori.

The discussion on Child Centric Education will remain incomplete if the names of Rabindranath and the Basic Education of Gandhiji are not mentioned. Being disgusted with the traditional narrow and artificial system of Education, Rabindranath set up 'Path Bhavan' at Santiniketan on ancient Indian ideals. We see in the 'Ashramic Siksha Babastha' founded by him that the close relation between the learner and Nature in the Education System for the child in the lap of Nature, the intimate relation between the teacher and the learner and unrestricted freedom of the child development.

Mahatma Gandhiji wanted the development of the child's body, mind and all that is best in the soul of the child. The unfoldment of the learner's all the qualities like dignity of labour, co-operative feeling, self-help etc. take place in this Education system.

4.3.2 Characteristics of Child Centric Education

The various characteristics of Child Centric Education are given below in first.

- (1) **Free Discipline** : Spontaneous discipline in place of forced traditional discipline is a special characteristic of Child Centric Education.
- (2) **Activity** : At present special importance has been given on Activity Method. The children will receive education through activity in place of inactivity—this is an important characteristic of Child Centric Education.
- (3) **Unrestricted Liberty** : Child Centric Education has given boundless freedom (liberty) to the child. It has been prohibited that the children will not be forcibly burdened with anything. The children will work according to their interest, taste and capability.
- (4) **Psychology based** : Modern Child Centric Education is based on the theories experimented by Psychology. The teaching method, conception about discipline, curriculum etc. have been specially influenced by psychology.
- (5) **Creativity** : Efforts are taken to unfold creativity in the child in Child Centric Education through various kinds of hand works (crafts), such as different types paper cuttings, clay modellings, various works with liters (waste things), colour-works etc.
- (6) **Individual-Centric Teaching Method** : In the Child Centric Education every child is given the opportunity of unfoldment (manifestation) according to its own capability, interest and trend. The teacher keeps an eye on each child. His/her teaching method is absolutely individual centric.
- (7) **Close relation between the Teacher-Learner** : As a result of accepting Individual Centric Education in the Child Centric Education the relation between the teacher and the learner becomes close and sweet. At present the teacher is the friend and guide (counsellor) of the learner. That the teacher will give good counsel in the building of the moral character of the child and in the manifestation of personality in it as per necessity, is desirable.

- (8) **Integrated Curriculum** : A special characteristic in Child Centric Education is its integrated curriculum. The curriculum is no prepared centering various theories of education.
- (9) **Use of Teaching Apparatus** : Another characteristic of Child Centric Education is the use of the modern developed teaching apparatus—through which education can be made more interesting and joyful, such as the teaching apparatuses like Didactic Apparatus in Montessori Method, Gift in Froebel’s Kindergarten Method etc. are very useful to the children.

Everybody now admits the importance of Child Centric Education. In the foreign countries this Child Centric Education is given special importance. Though the Child Centric Education has not developed as it should have been, thinking on this matter is going on now-a-days and it is expected that the Child Centric Examination will improve a lot in future.

Check your progress :

1. Explain the utility of Child Centric Education.

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2. Mention the characteristics of the Child Centric Education.

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3. Make a comparative discussion between Traditional Education and Child Centric Education.

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4. Explain the importance of Basic Education.

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| 5. Mention the characteristics of Rabindranath's Education-Philosophy.
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| 6. Discuss in brief the Education Policy of Montessori. Estimate the utility of Montessori Method in Child Education in the modern age.
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4.3.3 Its importance in Pre-Primary Stage

In the modern education 'Child-Centre' means the child is at the centre of all Education system. The Education System that is directed on the basis of the learner's capability, intelligence, interest, taste, demand etc. is called 'Child-Centre' Education at present.

Rousseau was the founder of the Child-Centre Education the characteristics of which are found in the modern Education System. So Rousseau is called the father of Child-Centre Education.

He thought that the medieval Education System only chained man but could not bring about the broadness of mind. So he spoke of Education according to the nature of the child. He said that the education of the child would be in keeping with the child's in born aptitude, i.e., nature, demand, will, taste, trend and emotion.

In those days, no opportunity was given to the child for the unfoldment of its aptitudes in the Education-System. The child was burdened with some information (knowledge).

It was Rousseau who first said that the child is not for education, but education is for the child and Education is to be framed according to the nature of the child.

So he stood against the traditional Education-System. He said that the child would learn freely through direct experiences in the lap of the nature tucked away from the society. The child's education would not be confined to books. The child would learn directly from nature according to his own will. Special implication has been stressed on the child's activity in the curriculum. The children would acquire knowledge from the natural world with observation and experiment. He included physical exercise, hand work (craft) and vocational training in the curriculum.

Two educationists whose names are specially worth mentioning in the Child Centric Education are Froebel and Madam Montessori.

In the opinion of Froebel the child would learn according to its natural interest and demand. The child is to be educated amidst spontaneous joy and merriment. Naturally all children are always active. He remarked this activity as self-activity. The ideal teaching method would be such as this self-activity of the child should be utilized in the direction of the teaching process. Froebel was the first educationist who spoke of education through play. Play gives joy to the child. Play gives freedom and satisfaction. So he gave special implication on play in his Kindergarten Method. He also gave special implication on hand-work (craft) for the unfoldment of creative talent in a child.

According to Madam Montessori each child is a neutral individual self with its own undividedness, so if the child is to be given education, it should be given education according to its capability. The main theme of the education philosophy of Madam Montessori is special implication on individuality.

Special importance of the education system is laid on individuality.

4.4 Unit Summary

Rousseau is called the father of Child Centric Education. 'Child-Centre' in the modern education means child is at the centre of all education. It means the education that is directed on the basis of the child's capability, interest, taste, demand etc. is at present called Child Centric Education.

A few educationists who are worth mentioning in the Child Centric Education are Froebel, Montessori, Rabindranath and Gandhiji.

The characteristics of the child centric education are free discipline, activity, unrestricted freedom (liberty), psychology basis, creativity, individual centric teaching method, teacher and taught closely related curriculum and the use of modern teaching apparatus.

In the present time, the importance of child centric education is immense. Rousseau postulated that the education of the child would be in accordance with the child's in born aptitude, i.e., child's instinct, demand, will and tendency. Rousseau spoke of the unlimited freedom (liberty) of the child. The echo of Rousseau's Education-Philosophy has been reflected in the education-thinking of Froebel, Montessori, Rabindranath and Gandhiji.

4.5 Check Your Progress

- (1) The father of Child Centric Education is.....
(i) Montessori, (ii) Gandhiji, (iii) Froebel, (iv) Rousseau, (v) Rabindranath.
- (2) 'The child is not for education—Education is for the child', who said this?
(i) Gandhiji, (ii) Froebel, (iii) Rousseau, (iv) Rabindranath, (v) Montessori.
- (3) Write short notes on :
'Child Centric Education'.
- (4) Answer the following questions :
 - (a) Explain the implication of the Child Centric Education.
 - (b) Why is Rousseau called the father of the Child Centric Education?

4.6 Assignment

Discuss elaborately the characteristics of the Child Centric Education. Explain how much significant is the characteristic of the Child Centric Education in the Child Education today?

4.7 Exercises

Answer the following questions :

1. What do you mean by the Child Centric Education?
2. Explain why Rousseau is called the father of Child Centric Education.
3. Make a comparative discussion between the traditional education and the modern Child Centric Education.
4. Prepare a chart mentioning the characteristics of the Child Centric Education.

Unit 5 □ Co-curricular Activities in Pre-primary Education

Structure

5.1 Introduction

5.2 Objectives

5.3 Co-curricular activities in Pre-primary Education

5.3.1 Conception about co-curricular activities

5.3.2 Various types of co-curricular activities

5.3.3 Activity based Education

5.3.4 Liberty and Discipline

5.3.5 Reward and Punishment

5.4 Summary of Unit

5.5 Check Your Progress

5.6 Assignment

5.7 Exercises

5.1 Introduction

The objective of education in the ancient age and in the medieval age throughout the world was the unfoldment of intelligence in the child. As a result, the curriculum was subject centric and Teacher Centric. The main objective was to burden the learner with information forcibly.

In the eighteenth century Rousseau first stood against this education system. He protested against the forcibly burdening the learners with all thinking them to be grown ups. He said that the child is not for education, but education is for child. It means the child will be at the centre of education. Considering the nature, taste, interest, desire, tendency etc. of the child Rousseau upheld his view of teaching method. Rousseau directed to make way for the unfoldment of the child's mind and stabilize the teaching on the foundation of psychology.

The educationist Froebel viewed that education is the unfoldment or manifestation of all the inherent inborn instincts in a child. So he spoke of the inclusion of dance, rhyme and song, drawing, claymodelling etc. in the curriculum. He attached much implication on story telling and play way method in education, aiming at the all round development of the child. He spoke of all these works which we at present call co-curricular activities.

Madam Maria Montessori, Gandhiji and Rabindranath Tagore paid importance to co-curricular activities because of the all round development in a child.

The co-curricular activities which different educationists mentioned, require to be included in the school curriculum. Specially, physical education and cultural activities should be given importance. The activity based method which is creativity and productivity through work will have to be included. There is the special necessity of the inclusion of the handwork in the curriculum. Besides this many other types of works may be included in the curriculum. Among these N.C.C., N.S.S. etc. are very popular. All round development in a child takes place in this sort of activity. The teacher will select the particular work after his own preference and try heart and soul to give it a successful performance. When the teacher, the school and the learner all involve themselves spontaneously in these works, they will realize their implications.

The activity in education means—education will be through some creative and productive works with specific objectives. The spontaneity of the learner is the main word of activity. The child will work spontaneously and joyfully and learn through the performance of the work. There does not differ with playway in education. So the playway in education may be taken into account (considered) with active work based education as a special care.

The chief characteristic of activity is that the child will select a work after its choice, there will be no interference in its work and it will be given unrestricted liberty. Besides this, the child will work spontaneously with joy and the work will be productive.

The main point of activity is work for which the child has instinctive attraction. The child prefers learning through works to books. As an inaugurator this instinct of work creates the impressive energy in the child for education. So this method is psychology basis.

The children gets the opportunity to unfold themselves through various works related to Activity or Work Centric Education. As a result, there lies the scope of the unfoldment of creative talent. There is also the opportunity of easy revelation (unfoldment) of the child's

emotional reactions. The education or experience acquired by the children through Activity is without monotony. Rather they avail themselves of the opportunity of working in a joyful environment. The attitude of co-operation grows up in them and they carry this co-operative feeling all long in the social life afterwards.

According to the ancient point of view, the purpose of Discipline is to build the learner as the successor of the life enriched with ideals. If this type of discipline is to be brought in a child, all the unsoical tendencies in the child must be brought under control. So the ancient significance of Discipline in the field of education is, 'spare the rod and spoil the child.'

This conception of 'Discipline' has been changed in case of the modern Educationists. According to the opinion of the modern educationists, the self-control which spontaneously originates from the case of the heart of the child to control itself is Discipline. It means the heart felt desire (will) to control the conduct is called Discipline.

The English 'Discipline' has been originated from the Latin word 'Disciplina' which means the process to learn something. Discipline is absolutely essential in the field of education. All the objectives of education are based on Discipline. The conceptions (views) of the educationists have been divided into two classes :

(1) External Discipline, (2) Internal Discipline.

The Discipline such as the artificial material like strict rules and regulations, punishments, prizes etc. which are found in a person, is called External Discipline. When a person without being instigated by any external incitement works spontaneously abiding by all rules and regulations, the discipline found in him is called Internal Discipline.

Since the ancient time the tradition of Punishment and Prize has been associated with the System of Education. We know of the system of giving punishment according to the offence or guilt since the Vedic Age.

Giving punishment creates an adverse reaction in a child many a time. The system of giving punishment is not accepted now-a-days.

The objective of the child is the all round manifestation of the child's all personality and individuality. There is no place of punishment in the Education System which aims at the perfect unboldment of the individual self.

5.2 Objectives

The learners will be able to acquire the following skills by reading the present Unit.

1. The learners will be able to discuss what means by co-curricular activities and about various kinds of co-curricular activities.
2. They will be able to explain the implications of the co-curricular activities in the Pre-primary stage.
3. They will be able to analyse the necessity of Activity Method in Education.
4. They will be able to give instances how the children will keep up Discipline in Education through liberty.
5. They will be able to prepare a chart showing differences between ‘Discipline’ and ‘Liberty’.

5.3 Co-curricular Activities in the Pre-primary Stage

In the present time the objective of Education is the all round development in a child—Intellectual, Psychological, Social, Physical and Spiritual development. The conception of Education in the past was different. Only importance was laid on the Intellectual Development of the child. In the Medieval Age, the objective of Education was to burden the child with the load of knowledge (information). As a result, the curriculum was Subject-Centric and Teacher-Centric. The child was treated as the miniature form of the grown ups. This view was not favourable to the Teaching works of the learner’s physical, psychological, social and education related activities. As for example, games and sports, dramas, cultural activities, dance, song, drawing, hand-work which are now called co-curricular activities, were not included in the curriculum.

But afterwards many changes took place in the Education Ideology gradually. The sole objective of Education is the unfoldment of the learner. It means all round development of a child. the unfoldment of all these instincts and aptitudes in a child is to be done in the life of a child in the school and the change in the framing of the curriculum is to be done in keeping with this objective in education.

The founder of the Child Education is Rousseau. It was Rousseau who first stood against Medieval Education System and spoke of placing the child at the Centre of Education. He viewed that education should be imparted according to the nature of the child—that is, education should be given in consideration of the child's demand, taste, interest, will, aptitude and everything. Directing to make ready the path of Mental unfoldment of the child, he prepared the path to give footing Education on the foundation of Psychology.

The opinion of the Educationist Froebel regarding the objective of education is to unfold (reveal) all in born aptitudes in a child. So he viewed to include clay modelling, drawing, dance, song, rhymes in the curriculum. Besides these, he spoke of Play way Method. He also attached special implication (importance) to Story Telling in the curriculum. He mentioned all these works for the all round development of a child and we now call these works 'Co-curricular Activities' in education.

Madam Maria Montessori gave importance to Hand work in the Pre-primary Education. She also spoke of acquiring the habit and skill of doing the works necessary for day to day life of the children.

In addition to the main item Hand-i-Work in the Basic Education, Mahatma Gandhi included drawing pictures, song and physical exercise in the curriculum, Gandhiji believed in these types of works for the all round development of a child in education.

The poet Rabindranath gave importance to the development (unfoldment) of complete personality (individuality) in a child. Rabindranath was a Naturalist and he included Art in the curriculum to realize perfectly the beauty of the nature of the universe. He also gave importance to dance and music to get acquaintance with our culture. He pointed out of various kinds of handworks and creative works for the social unfoldment.

Now, we see that different educationists paid much importance to co-curricular activities in the Pre-primary stage.

5.3.1 Conception about co-curricular activities

In the ancient education system importance was given to the Psychological unfoldment of Intellectual manifestation only. The curriculum was the assimilation of knowledge (information) based subjects. The sole objective of education was to burden the child's mind with the load of some information, whether they were of any use in the child's life

or not. As a result, the selected curriculum was naturally subject centric. Learning (study) will be as good as meditation to the learners. According to this conception, the physical and various social activities were not favourable to Educational activities like games and sports, drama, song, drawing, dance, hand work (craft) etc. which were regarded anti-education.

Afterwards, a lot of changes take place gradually in educational ideas. Modern educationists hold the opinion the sole objective of education is the all round development of the child. They point out different sides relating to this all round development. The different sides of development are as follows :

- (1) Mental Development
- (2) Physical Development
- (3) Spiritual Development
- (4) Social Development.

The development of all these aspects in the life of the child is to be done in the school through education. The conception about the curriculum has been changed in keeping with this objective of education.

The first pioneer of Child Centric Education was Rousseau. He first placed the child at the centre of the Education System. We first get the recognition of the theory in Rousseau that the importance of inborn aptitudes, tastes, likes and dislikes, interests etc. in a child is immense in the field of education. He paved the way to give a footing to education on the foundation of Psychology by directing to prepare the path of Mental Development of the child.

The Educationist Froebel thinks that all children are born with all qualities. The objective of education is to unfold or develop all the inborn qualities in a child. So he opined that clay modelling (clay-work), drawing, dance, song etc. should be included as a part of curriculum. In the opinion of Froebel the child will learn according to its inborn interest and demand and the child will be taught through spontaneous joy. Froebel is the first educationist who spoke of imparting education through plays. His great achievement is that he first undertook the endeavour to make education easy and joyful to the children through story telling, song, drawing, hand work etc. instead of confining education to bookish knowledge.

Madam Montessori included hand work (craft) in curriculum. She stressed on such education as would teach how to acquire some habits and skills—like maintaining physical cleanliness useful to life.

In Gandhiji's Basic Education drawing pictures, song, physical exercise etc. over and above hand work and other teaching subjects have been included. Gandhiji believed that it would be possible to make the all round development in a learner through this type of curriculum and to keep deep contact with the persons in the society.

The poet Rabindranath said, "That is the best education which does not supply information only but builds our life in keeping with the world." He specially emphasised on the perfect manifestation of individuality. He spoke of including Art for the successful realisation of the beauty of the World Nature. Rabindranath also viewed that Song and Dance would be cultivated in the school in order to get the acquainted with its culture. He was also in favour of including various kinds social services and social development works in the curriculum to help the social enfoldment in the child. He in his education system laid emphasis on creative works like Gandhiji. This is the theory of Rabindranath in the Child Education.

5.3.2 Various types of co-curricular activities

A well organised plan is essential for the management of a school. The co-curricular activities will have to be included in this type of successful plan generally the activities outside the class room which help us to carry out the responsibility of school functions may be classified in three types. These three types of activities are as follows :

(1) Physical activities, (2) Educational activities, (3) Cultural activities.

1. Different types of Physical Exercise activities may be accepted as co-curricular activities. Different types of games and sports may be may be accepted as co-curricular activities. They are Football, Volley ball, Basket, Badminton, Table Tennis etc. Again on the other hand Race, Swimming, Boxing, Physical Exercise etc. may also be accepted. These sorts of activities cause not only physical development but also social qualities enfoldment.

2. Besides learning through the teaching by the teacher in the class, the learners can acquire different types of educative experiences through various co-curricular activities. Literature-meeting, Debate, Seminar, Exhibition, Educational Tour etc. fall in this category.

3. In addition to this, the enfoldment of social self in the learner is easily done through different types of cultural activities. The unfoldment of social qualities in a person takes place through the activities like Drama, Recitation, observation of Health-week, Participation in village upliftment etc. and the cultural life of the learner gets betterment.

Besides these, various activities are accepted in the school. Out of these N.C.C., Scout, Girls' Guide, N.S.S. (National Service Scheme) etc. have become much popularised in our country. The manifestation of all the qualities in a child takes place through the co-curricular activities. The teacher will choose the particular activity according to his/her own facility and try heart and soul to give it a successful shape.

No good result from this type of play is available without the sincere united effort of the teacher, the school and the learner. When all will spontaneously devote themselves, the success of these activities will be realised.

5.3.3 Activity-based Education

Activity-based Education means, Education will be through the medium of some purposeful Creative and Productive Activity. While doing this sort of activity the child will acquire the behaviour, skill, habit and ideals of the purposeful education.

The spontaneousness in the learner is the basic theme of Activity. The child will work with joy spontaneously. From this point of view there is no difference between play way in Education and Activity-Based Education. So Playway in Education may be considered in a particular field of Activity-based Education. The main characteristics of Activity are :

- (1) The child will select the activity according to its own will.
- (2) The particular work related to Activity will be Productive.
- (3) Education according to Activity will be Child's Activity-Based.
- (4) There will be no interference in the liberty of the child's activity and the child will work in the joyful atmosphere.
- (5) There is no difference between Activity and Play-way in Education.

Utility of Activity :

1. Each of different types of Teaching Methods in Psychology, such as Imitation, Trial and Error, Insight etc. is Activity-based. The task which has been stated in

Activity as one kind of reaction to problematic situation. So in order to create an atmosphere to receive Psychology based education, it is absolutely necessary for a working situation which will raise a problem before the learner.

2. The main idea of Activity is work to which the child is naturally attracted. This instinctive attraction for work will create in the child an inspiring energy for education as an inangulator. So it can be said that Activity is Psychology based.
3. The learner performs a particular work directly through active education. The learner requires to move his limbs to perform the work and as a result of the movement of limbs, his physique becomes healthy and sound.
4. The Activity based Education gives an opportunity to express the emotional reaction of the child easily.
5. Individual Difference is the Law of Nature there lies the difference between man and man. In a particular class many students are highly intelligent and in the ordinary class many students are of less intelligence. In their case, abstract knowledge needs to be concrete. So the characteristic of Psychology based method is from concrete to abstract.

The Work Centric Education Project turns the abstract knowledge concrete and helps to impart it making it suitable for the child's mind.

- (6) As the Work Centric Education System possesses variety, the children do not feel bored or monotonous, rather the children get the opportunity to work freely in a joyful environment.
- (7) The objective of education is the all round unfoldment or development in man the perfect manifestation of man. Manifestation or unfoldment means the revelation of both body and mind. Only Work Centric Activity Education helps this perfect manifestation of a person.
- (8) The children get the opportunity to unfold (manifest) themselves through different types of activities in Work Centred Education. As a result, discipline is maintained naturally in the field of education.
- (9) Work Centred Education makes the children conscious about the dignity of labour since their childhood. The children acquire training in vocational education which is utilized in their future life.

- (10) Co-operative Co-existence is needed most in the healthy social life. The learners receive this training of co-operation through Work Centric Education. As this sort of working unitedly gives rise to the unfoldment of mutual understanding. They carry this feeling of co-operation in all their social life afterwards.

5.3.4 Liberty and Discipline

Conception of Discipline :

According to the ancient theory discipline outward situation which the teacher forcibly applies on the learners by means of his own personality and various rules and regulations, but it leaves behind a noble aim—to make the learner a successor of the improved Life-ideals. If discipline is to be brought in pursuance of this conception, all the internal unsocial tendencies in the child must have to be repressed. So the ancient significance of discipline in the field of education, ‘spare the rod and spoil the child’—this proverb has been nicely expressed.

To the modern thinkers the significance of discipline has been changed. The educationists of the present day hold the view that the self-control which spontaneously originates from the case of the heart of the learner to control his own behaviour is discipline. Besides this, the educationists have used the phrase ‘Spontaneous Discipline’ in place of ‘Discipline’ in order to differentiate traditional (Stereo typed) discipline.

Usefulness of Discipline in Education :

Any kind of Social Clan is to abide by some rules and regulations or the people of this clan have to reside in a special kind of discipline. Likewise, if the behaviour of the children is not restricted to particular rules and regulations, indiscipline may crop up. Discipline is essential to make the teaching method and teaching project successful. Discipline is absolutely necessary in school life for the unfoldment of individual life. If the learner does not pay attention to studies and does not cultivate strictly, education remains incomplete. Discipline is essential in school so that the learners may behave in this way. Discipline is part and parcel of education. So the importance of discipline in education can not be denied. We see strict discipline in ‘Brahmacharya’ of the ancient Indian and Buddhist—Education Systems.

Now-a-days different kinds of indiscipline always found in the education system and in the school bring forward education to the path of ruin day by day. If education is to be

applied as the means of the building of the nation, care should be taken to bring discipline in the school life. The learners will acquire the habit of complying with all the rules and regulations of the social life in their school life. This habit of obeying the rules and regulations will be transmitted (passed on) to the social life. As a result of this the social life must be peaceful. The English word 'Discipline' has been derived from the Latin word 'Disciplina' which means the process of learning. The word 'Disciple' is also related to 'Discipline'. So the question of Discipline is part and parcel (closely related to) of Education. All the objectives of Education stand on Discipline.

The conception of the Educationists is divided into two groups. They are :

- (a) External Discipline
- (b) Internal Discipline.

External Discipline :

The obedience to rules and regulations that is found in a person through strict bindings (obligations), the fear of punishment, and artificial items of prize is called External Discipline. This Discipline is called Artificial Discipline or Negative Discipline.

Internal Discipline :

When a person without being instigated by external instigations works spontaneously abiding by all necessary rules and regulations, the discipline found in him is called Internal Discipline which is Free Discipline, Self Discipline, or Natural Discipline. Modern Educationists are in favour of this sort of Discipline.

The main point of Free Discipline is to unfold the personality of the learner the freedom of the learner in all affairs is acknowledged. The learner may learn in school according to his/her inborn aptitude, interest and instinct. There will be rules and regulations in the school and one of the objectives of Free Discipline is to build up such an attitude by which the learner may accept the rules and regulations.

Rousseau is the founder of modern conception of Discipline. Rousseau thinks that the child is pure and free when it is born, but the society chains, the child in different ways. This artificial chain stands in way of the unfoldment of the personality in the child. He must be given boundless liberty by freeing him from this chain. The educationists like Froebel, Madam Montessori, the poet Rabindranath etc. attached great importance to the liberty

of the child. The Montessori Method, Froebel's Kindergarten Method and Project Method are the appropriate instances of applying Internal Discipline of Liberty in Education.

Freedom in Education :

Just as Discipline is indispensable (absolutely necessary) to make the Teaching Method successful, so liberty is also essential to make the objectives of education fruitful. Ancient Greek Philosopher Aristotle, Philosopher Comenius etc. viewed of applying the theory of Freedom (Liberty) in Education. Each of them is in favour of giving limitless liberty to the child. Rousseau in his Theory of Education expressed specially this thinking of the ancient greatmen. This theory of Rousseau has been able to create a new movement in the modern field of education. In the present age the progressive teachers believe in the boundless freedom. This is the chief characteristic of Modern Education.

In order to make Education successful, the Activity is to be utilized and the child is to be given liberty. So we find this characteristic in the different proposed different teaching methods of the modern educationists like Dalton Plan, Project Method, Kindergarten etc. The chief characteristic of the Modern Methods is that the Law of Liberty has been accepted here. Now it may be said that Law of Liberty is to be accepted for the all round development a person and the success of the objectives of education.

Discipline and Freedom :

We can see that both discipline and freedom are absolutely necessary in the field of education. Discipline is essential to make the Education System successful and to create a favourable environment for education in the school. Again Individual Freedom is absolutely essential to make the objectives of Education fruitful and for the perfect development of individuality. But discipline and freedom are completely (fully) contradictory to each other.

Both Discipline and Freedom are necessary for any successful creation. Just as we accept discipline in the modern sense, so freedom in the field of education is to be accepted. We should bear this in mind that freedom is neither lawlessness nor autocracy. The freedom in education which we speak of is full of objectives and that objective is scheduled for the welfare of individual life. So the co-ordinated application of discipline and freedom is to be done in the field of education to make education a success. Bondage and Freedom—both of these are needed for the unfoldment of man. So in the modern age the educationists are in favour of adding the basic materials of freedom to spontaneous

discipline. At present the word which they have used to express specially this characteristic in place of discipline is Free Discipline, that is, the successful combination of Discipline and Freedom.

5.3.5 Reward and Punishment

System of reward in school :

The system of giving reward has been in vogue from the ancient time. The Psychologists think that two things are needed for doing any work. One is Incentive and the other is Motive. Incentive incites working motive in the person and this motive instigates the person to work. Reward works as Incentive in the work and creates Motive useful to education in the learner.

Ordinary rewards are of two kinds—

(1) Objective, (2) Psychological.

If any learner shows any special there is custom of rewarding him/her with a book, a toy, money or a medal. These are called objective Reward. The utility of this sort of reward specially depends on the utility value. Over and above this the teacher encourage the learners through praise, congratulation etc. These may be called Psychological Reward. This kind of reward makes the learners self conscious and enables to create interest in the learners. This Psychological Reward is more effective than the objective Reward. Psychological Reward System is desirable from the point of Educational Ideals.

Check Your Progress :

1. Explain the utility of the co-curricular activities in the Pre-primary stage. Mention what kind of co-curricular activities are necessary in this stage.

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2. Explain the importance of Activity Based Method in the Pre-primary stage.

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3. Discuss the necessity of Discipline in Education.

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4. 'Co-ordination is required between Discipline and Freedom'.—State your opinion in this context.

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5. Discuss how you will co-ordinate Punishment and Reward in Education.

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Comparison between Objective and Psychological System of Reward giving :

Objective Reward	Psychological Reward
1. The influence (impact) of Objective Rewards is short lasting.	1. The influence (impact) of Psychological Rewards is much more lasting.
2. The power of the Objective Reward is determined by monetary value.	2. The power of the Psychological Reward is determined by Psychological Motive.
3. The Objective Reward may give rise to temptation (greed) in the mind of the learner.	3. The Psychological Reward supplies Motive in the learner.
4. The Objective Reward is expensive.	4. The Psychological Reward is the strategy of the teacher.
5. Objective Rewards many a time incite the learner to form bad habits.	5. Psychological Reward present the learner from acquiring bad habits.
6. Giving away Objective Rewards is comparatively easy.	6. Giving away the Psychological Reward is difficult.

In the present time many educationists and Psychologists think that when Rewards acts as Incentives and supplies motives to education, Rewards should be given to all, good result is available if the objective and Psychological rewards are awarded to all. But in the modern age the Psychologists and the Educatinists are not at all in favour of Objective Rewards. They all admit the implications of the Psychological Reward in the field of

education. The teacher will have to conduct this type of Rewarding giving system very skilfully, because the effect of the Psychological Rewards is available as easy as its bad effect is also so easily found. While praising a learner the other learner should not think that he/she has been neglected by the teacher. The good result may be available, if the teacher in the present education-system can motivate all equally as a responsible friend.

Punishment :

The system of inflicting Punishment and awarding Reward is closely related from the very ancient time. The Reward and Punishment System becomes indispensable for the learners to pay attention to studies to bring loyalty to the teachers, the Management authority and discipline in the school. We all are more or less acquainted with severe punishment in the school in the ancient time. Then Punishment was thought to be regarded as indispensable. In the epic age we see that if the disciple committed a negligible offence, the preceptor cursed him severely. There was the provision of strict Punishment in the ancient Indian Ashramic Education System. In the later age we see special importance was given on inflicting physical punishment to the learners. The opinion-‘Spare the rod and spoil the child’ was in vogue. The traditional thinking was that if the learner does any wrong, he/she is to be led to the right path through physical (corporal) punishment.

Bad Effects of Punishment :

In the modern age the Psychologists and the educationists are not in favour of inflicting neither Physical nor Psychological punishment to the children. The theory of punishment has been criticised from the different corners and different defects have been pointed out.

The defects are as follows :

1. Punishment gives rise to inferiority complex. The learner who gets punishment thinks himself to be inferior to others and he becomes timid and weak.
2. Many a time the child becomes brightened of study-subjects and loses interest in studies, as a result of conditioning with the system of punishment. If the child commits an error while learning and gets punishment, he/she is found to lose interest in the subject concerned. The learner’s retradation in different subjects occurs much in this sort of conditioning.
3. As a result of punishment an adverse attitude in the learner’s mind develops against both the teacher and the school. Consequently, the environment congenial to teaching is marred.

4. The impact of Physical and mental punishment cannot last long. The effect of punishment is derived from fear. As long as the learner will be frightened, its impact will exist in him/her so long. Again, when this fear will subside, he/she will behave unruly.
5. Many a time, the impact of punishment gives rise to the Tendency of Escape in the learner. Consequent on being punished again and again the child becomes disinterested or disgusted in studies or in special circumstances. The child then intends to escape such a situation and refrains from coming to school whenever opportunity comes. The child cannot properly accommodate with the environment.
6. The corporal punishment causes the probability of the limb injury of the learner many a time.
7. Many persons opine that we only accept joyful experiences and forget sorrowful experiences but it is not true. So this conception that the learner will forget the painful incident related with punishment, is not always true, rather the contradictory result is bad.

For all these reasons the rule of punishment is not admitted now. The objective of education is the all round development of all the individual qualities in man and there is place of punishment in the education system for the perfect manifestation of the individual self.

5.4 Unit Summary

In the ancient and in the medieval age the objective of education was to manifest the intelligence of the learners all over the world. In the Eighteenth Century Rousseau first protested against this system of Education. It was he who first viewed that the child is not for education but education is for the child. It means the child will be at the centre of education. This is called Child Centric Education, the founder (Pioneer) of which was Rousseau. He spoke of building the Education system for the child considering the taste, interest, demand, motive, will etc. in keeping with the nature of the child. That is, Rousseau prepared the path of the psychological unfoldment of the child.

In the opinion of Froebel the objective of education is the unfoldment of all inborn instincts in a child. So he included dance, rhyme and song, drawing, clay modelling etc. in

the curriculum—which are now called Co-curricular Activities. Besides this he spoke of imparting education to the child through Story Telling Method and Pay-way Method.

Thinking of the all round development in the Child Maria Montessori, Gandhiji, Rabindranath Tagore—all of them paid much importance to the Co-curricular activities in Education.

While discussing Activity in Education. Gandhiji's Work Centred Education needs to be mentioned first of all. The chief characteristic of Gandhiji's Basic Education is Work Centred Education. Gandhi viewed of giving education to the children centering any one industry in relation to other subjects. Just as Gandhiji spoke of Basic Education thinking of rural economics, so Rabindranath also attached importance to various kinds of hand works in consideration of rural economics. So still today hand works (crafts) like the boutique, tannery, weaving, binding, carpentry etc. are done at Sriniketan in Bolpur. The demand of these crafts is very high.

The chief characteristic of Activity is that the child will select the work according to his choice, no body will interfere in it, the child will work spontaneously with joy amidst boundless freedom and the work will be productive. The main theme of Activity is work to which the child is ever attracted. This work as Incentive fosters Motivation and in the child for education. So this method is Psychology based.

We hear of Activity in the voice of Froebel and Montessori. Froebel spoke of clay modelling. The main characteristic of Montessori Education Method is Activity based Method. Montessori was against stereotyped bookish education. She spoke of Directress in place of the teacher in the class and their role will be observe the activity of the children and if required, to assist them. The children themselves will work independently with the teaching apparatus and the experience they acquire through their sense organs is their education.

According to the ancient opinion the objective of Discipline is to make the learner a successor of high life-ideal. This conception of Discipline is different to the modern educationist. The modern educationists opine that the self-control which originates from the desire to restrain the learners from the core of their heart spontaneously, is Discipline.

The English word 'Discipline' has been originated from the Latin word 'Disciplina' which means the process of learning. Discipline is very important in the field of Education.

All the objectives of education are based on Discipline. The conception of the educationists about Discipline has been divided into two classes. They are

1. External Discipline
2. Internal Discipline

Of these two Internal Discipline is desirable. When a person is incited by external instigations, it is called External Discipline and when he works abiding by necessary rules and regulations spontaneously, the discipline found in him is called Internal Discipline which is called Free Discipline, Self-Discipline or Natural Discipline. The main idea of Free Discipline is the development (unfoldment) of personality. The chief characteristic of Free Discipline is the freedom of the child.

Rousseau was the propagator (originator) of the modern conception of discipline. Educationists like Froebel, Montessori, Gandhiji, Rabindranath etc. are the worth instances of the application of the Internal Discipline in the child's freedom.

Freedom alongwith Discipline side by side is absolutely necessary to make the Teaching Method successful. Many ancient philosophers were in favour of the unrestricted freedom of the child. Rousseau first spoke of giving unrestricted Freedom to the child by freeing the child from all social chains. In order to make education a success, Activity is to be utilized and the child is to be given boundless freedom—that is, the principle of Freedom is absolutely necessary for the unfoldment of the personality of the child or for the fulfilment of the objective of education.

Psychologists think that two things are needed for the performance of any work, one is Incentive and the other is Motive. Reward acts as Incentive in the case of Education and creates Motive befitting Education in the learner. Rewards are of two kinds—(1) Objective Reward and (2) Psychological Reward. Psychological Rewards are preferable to the children in the school. But if the teacher taking the responsibility of a friend can equally motivate the children, then only, Discipline side by side Freedom is specially necessary in case of education. Educationists and many ancient philosophers were in favour of unrestricted freedom of the child and it was Rousseau who first of all declared unlimited freedom in Child-Education. He was not in favour of bookish knowledge. He supported the experience which the children will earn by observing nature through freedom. Froebel, Montessori, Gandhiji and Rabindranath also against Bookish Education. The view of each

of them was that the children will learn or acquire experience of their own freely. He protested against any sort of interference or force in the process of the children's learning. The law of Freedom is absolutely necessary in order to unfold the child's personality or fulfil the objectives of education.

The psychologists think that two things are essential for the performance of any work. One is incentive and the other is Motive. Reward works as Incentive in case of Education and create Motive suitable for education in the learner.

The system of Punishment and Reward is associated with the system of Education from the ancient time. In the modern age the educationists think that psychological punishment in place of physical (corporal) punishment is needed. But the objective of education is the all round development of the individual self and there is no room for punishment in the education system that aims at the perfect unfoldment of all in man.

5.5 Check Your Progress

1. Which of the following educationist speak of the importance of co-curricular activities?
(a) Rousseau (b) Vivekananda (c) Dewey (d) Froebel
2. Who spoke of the usefulness of Activity Method in Child Education?
(a) Montessori (b) Pestalozzi (c) Gandhiji (d) Radhakrishnan.
3. State what kind of co-curricular activities are necessary in the Pre-primary stage?
4. Analyse the chief characteristics of Activity based Method in Education.
5. Write short notes on :
(a) Co-curricular Activities, (b) Activity based Method.

5.6 Assignment

Explain with reasons how it will be possible, you think, to maintain co-ordination between Reward and Punishment in the field of education.

5.7 Exercise

Answer the following questions :

1. State what kind of co-curricular Activities Froebel has mentioned in child education.
2. Explain how Co-curricular activities help in the unfoldment of a child.
3. What do you understand by Activity based Method? Discuss the usefulness of this method in Child Education.
4. Analyse the importance of Discipline in Child Education.

Unit 6 Montessori and Pre-primary Education

Structure

6.1 Montessori Theory and System of Education

6.2 The Stages of Child Development

Let us check our progress on Unit 1

Maria Montessori was born on the 31st August 1870 in the town of Chiaravalle, Italy. Her father Alessandro, was an accountant in the Civil service, and her mother Renide Stoppani, was well educated and had a passion for reading.

The Maria Montessori family moved to Rome in 1875 and the following year the young Maria enrolled in the local State school. As her education progressed, she began to break, through the barriers which constrained women's careers. From 1886 to 1890 she continued her studies at the Regio Istituto Technico Leonardo da Vinci, which she entered with the intention of becoming an engineer. This was unusual at the time as most girls who pursued secondary education studied the classics rather than going to technical school.

Upon her graduation, Montessori's parents encouraged her to take up a career in teaching, one of the few occupations open to women at the time, but she was determined to enter medical school and become a doctor, but initially Montessori was refused entry by the Head of school.

But Pope Leo XIII's intercession enabled her to enter the Faculty of Medicine, and she became the first woman to enter medical school in Italy. Her time at medical school was not easy. She faced prejudice from her male colleagues. But she was a dedicated student and on the 10th July 1896 became the first woman to qualify as a doctor in Italy.

She was immediately employed in the San Giovanni Hospital attached to the University. Later that year she was asked to represent Italy at the International Congress for women's Rights in Berlin, and in her speech to the Congress she developed a thesis for social reform, arguing that women should be entitled to equal wages with men.

In November 1896 Montessori added the appointment as surgical assistant at Santo Spirito Hospital in Rome. Much of her work there was with the poor, and particularly with

their children. In 1897 she volunteered to join a research programme at the psychiatric clinic of the University at Rome and it was here that she worked alongside Guiseppe Montesano with whom a romance was to develop. As part of her work at the clinic she would visit Rome's asylums for the insane, seeking patients for treatment at the clinic. She began to read all she could on the subject of mentally retarded children, and in particular she studied the ground breaking work of two early 19th Century Frenchmen, Jean-Marc Itard, who had made his name working with the 'wild boy of Aveyron' and Edouard Seguin, his student.

She was so keen to understand their work properly that she translated it herself from French into Italian. Itard had developed a technique of education through the senses, which Seguin later tried to adapt to mainstream education.

Seguin emphasised respect and understanding for each individual child. He created practical apparatus and equipment to help and develop the child's sensory perceptions and motor-skills, which Montessori was later to use in new ways. During the 1897-98 University terms she sought to expand her knowledge of education by attending courses in pedagogy, studying the works of Rousseau, Pestalozzi and Froebel.

In 1898 Montessori's work with the asylum children began to receive more prominence. The 28 year old Montessori was asked to address the National Medical Congress in Turin where she advocated the controversial theory that the lack of adequate provision for retarded and disturbed children was a cause of their delinquency. Expanding on this, she addressed the National Pedagogical Congress the following year, presenting a vision of social progress and political economy rooted in educational measures. The notion of social reform through education was an idea that was to develop and mature in Montessori's thinking throughout her life.

Montessori's involvement with the National League for the Education of Retarded Children led to her appointment as co-director with Guiseppe Montesano, of a new institution called the Orthophrenic School. The school took children with a broad spectrum of disorders and proved to be a turning point in Montessori's life, marking a shift in her professional identity from physician to educator.

Until now her ideas about the development of children were only theories, but the small school, set up along the lines of a teaching hospital, allowed her to put these ideas into practice. Montessori spent years working at the Orthophrenic school experimenting with and refining the materials devised by Itard and Seguin and bringing a scientific, analytical

attitude to the work, teaching and observing the children by day and writing up her notes by night.

The relationship with G. Montesano had developed into a close love affair, and in 1898 Maria gave birth to a child, a boy named Mario. In 1901 Maria left the Orthophrenic school and immersed herself in her own studies of educational philosophy and anthropology. In 1904 she took a post as a lecturer at the Pedagogic school of the University of Rome, which she held until 1908.

In one lecture she told her students, “The subject of our study is humanity, our purpose is to become teachers. Now what really makes a teacher is love for the human child, for it is love that transforms the social duty of the educator into the higher consciousness of a mission.”

In the meantime Montessori got an opportunity of working with normal children and bringing some of the educational materials she had developed at the Orthophrenic school. She established her first Casa dei Bambini or ‘Children’s House’, which opened on the 6th January 1907. Montessori felt “I had a strange feeling which made me announce emphatically that here was the opening of an undertaking of which the whole world would one day speak.”

She put many different activities and other materials into the children's environment but kept only these that engaged them. What Montessori came to realise was that children who were placed in an environment where activities were designed to support their natural development had the power to educate themselves. She was later to refer to this as auto-education in 1914 she wrote “I did not invent a method of education, I simply gave some little children a chance to live.”

By the autumn of 1908 there were five Case dei Bambini operating four in Rome and Milan. Children in a Case dei Bambini made extra ordinary progress, and soon 5-years-old were writing and reading. News of Montessori's new approach spread rapidly, and visitors arrived to see for themselves how she was achieving such results. Within a year the Italian speaking part of Switzerland began transforming its kindergartens into Case dei Bambini, and the spread of the new educational approach began.

In the summer of 1909 Montessori gave the first training course in her approach to around 100 students. Her notes from this period became her first book, published that same year in Italy, which appeared in transtion in the U. S. in 1912 as *The Montessori*

Method, reaching second place on the U. S. nonfiction best seller list, soon afterwards it was translated into 20 different languages. It has become a major influence in the field of education.

A period of great expansion is the Montessori approach now followed. Montessori societies, training programmes and schools sprang to life all over the world, and a period of travel with public speaking and lecturing, occupied Montessori. In 1939 Mario and Montessori embarked on a journey to India to give a 3-month training course in Madras followed by a lecture tour, they were not to return for nearly 7 years. With the outbreak of war, as Italian Citizens, Mario was interned and Montessori put under house arrest. She spent the summer in the rural hill station of Kodaikanal, and this experience guided her thinking towards the nature of the relationships among all living things, a theme she was to develop until the end of her life and which became known as **Cosmic Education**, an approach for children aged 6 to 12.

Montessori was well looked after in India, where she met Gandhi, Nehru and Tagore. Her 70th Birthday request to the Indian government that Mario should be released and restored to her—was granted and together they trained over a thousand Indian teachers.

In 1947 Montessori addressed UNESCO on the Theme 'Education and Peace'. In 1949 she received the first three nominations for the Nobel Peace Prize.

Her last public engagement was in London in 1951 when she attended the 9th International Montessori Congress. On 6th May 1952 she died in the company of her son, Mario to whom she bequeathed the legacy of her work.

6.1 Montessori Theory and System of Education

In the Montessori system, the child develops through a series of exercises or activities :

1. Preliminary Activity
2. Exercises of Practical Life
3. Sensorial Activity
4. Language Activity
5. Arithmetic Activity

6. Along with these the child's creativity and imagination is nurtured through story telling, rhymes and art and craft.

Each set of exercises is done with a primary aim in mind. But each stage also prepares the child for the next one.

When a child first comes to a Montessori House, the initial task is to familiarise him with the new environment and to help him adjust in it. This is done through games, songs and other activities.

After the child adjusts to the Montessori environment, the first activities that the child works on are ones that are familiar to him. Sweeping the floor, pouring water into a glass, pouring grain into small vessels from a large vessel, rolling out a mat and rolling it up again, setting a stool, carrying water on a tray in short, he is given the work he sees done everyday and that he always want to try. But of course, all the things he uses are made to his scale.

These exercise are called Exercises of Practical Life. On the one hand the children achieve some skills necessary for his personal life, in family life and in social life, on the other hand, it helps develop his motor skills and senses. He is ready for the next stage : Sensorial Activity.

Sensorial Activity deals with the senses of sight, hearing, touch, smell and taste. The senses are exercised with the aid of specially designed materials. The exercises develop the senses and help diagnose any sensorial weakness or disability the child may have. Each activity is first done by the adult and the children observe. Then, when the children come forward to do the activity, the adult withdraws and observes from a distance. A child generally is able to detect its own mistakes, if not, the adult shows the activity again and the child repeats it. The materials used for sensorial exercises are scientifically designed and precise.

In the same way, the concepts and skills of Language (reading and writing) and arithmetic are easily developed using scientific methods and materials evolved through much research and experimentation, that utilise the child's in-born strengths and potential.

6.2 The stages of Child Development

One must understand the fundamental development of the child between 2½ and 18 years of age. The child's needs change at each stage. Therefore children have to be grouped according to their needs. Then they can be educated according to their stage of development and the needs at this stage.

It is only if we can gain a comprehensive idea of the way a child develops from conception to 18 years of age that we can meaningfully assist his development. Dr. Montessori has divided child development into three environments.

1. The child starts life in the womb. This is the first stage and the first environment. Much of that the child learn starts within the womb itself. The brain develops to a remarkable degree of maturity within the first two trimesters, while other limbs and organs take longer. Since the brain grows very fast the learning process starts even before birth and the months in the womb comprise a very important stage. The child can hear sounds, and becomes familiar with the mother's voice even before birth.
2. The second stage of development starts at birth. When the baby emerges from the womb, it has no language and no visual recognition. But its brain is ready to learn. The brain records the environment through the senses and soon learns to recognise sights, sound, smells and touch. It also controls communication, and the baby can express itself through smiles and frowns and cries when in hunger or discomfort. According to Dr. Montessori, the mind at this stage soaks up information like a sponge.

She called it the 'absorbent mind'. She compared the mind of a child with a camera. It can simultaneously record a wide canvas of information, just as a camera can take a picture of many people together.

Language development starts in earnest after birth, as the baby learns to recognise her name and many words. Even though she cannot speak as yet, it is important to speak to her, sing and recite rhymes, because that increases her aural vocabulary. The more she sees, the more she hears, the more she learns. Therefore the Second Environment plays a crucial role in her development.

3. The Third Environment is the Montessori Environment—the school or House of children. Dr. Montessori never referred to the Third Environment as a school since the environment had to emulate the environment at home. That is why she called in the 'House of Children'.

In this environment the child sees and handle things with which she is familiar—she sees them at home. Only here they are scaled down so she can easily handle them. For example small stools, napkins for folding, vessels for pouring grain, brooms, foot-mats, jugs, trays and so on. All these are things that the child sees at home, but are rarely allowed to use—often because they are too large for them to handle. However, here they are their size, and they use them with eagerness and master them within a short time.

Apart from imparting household skills that they will use all their life, these exercises help strengthen their limbs, increase manual dexterity and eye-hand co-ordination. This prepares them for the stage when they have to hold and manoeuvre a pencil. These exercises also exercise their creativity.

In a Montessori House the child is given freedom. There is no set routine or time table; The adult or teacher must understand the child's needs. She must observe him carefully. She must know the environment in the Child's home and therefore his special needs and work with him accordingly. The role of the adult will be passive. According to Dr. Montessori “he must increase and we must decrease”. That means the child will continuously take from the adult and grow, while the adult must give him the work and gently withdraw.

The child must be spoken to with love and respect. He must never be commanded, he must be asked if he would like to do the work. Dr. Montessori called it an 'assistential approach'.

Let us check our progress on Unit 1.

1. Answer in about 60 words each :
 - (a) What are the exercises or activities through which the child develops in the Montessori system?
 - (b) Explain what do you understand by 'Cosmic Education and Absorbent Mind.'
2. Answer in about 250 words each :
 - (a) Mention the stages of child development as mentioned by Maria Montessori.
 - (b) Discuss the life of Maria Montessori.

Unit 7 ☐ Development of Montessori Method

Structure

7.1 The First Casa Dei Bambini or House of Children

7.2 Secrets of Childhood

Let us check our progress on Unit 2

7.3 Principles of Self-Education

Maria Montessori at the medical school of the University of Rome, and though its free clinics, she came into frequent contact with the children of the working class and poor. These experiences convinced her that intelligence is not same and that most children come into the world with the human potential that is hereby barely revealed unless adult creates environments specifically designed for children to exercise their learning capabilities.

In the early part of her career, she was deputed to work with mental patients. She was horrified to find that psychiatric patients were not the only ones housed there. There were disabled children too who were housed with the demented. She tried to convince the other doctors that it was not right, that the disabled should be separated from the demented. But none agreed. She protested. The institute was treating its patients as guinea pigs.

She continued her protests to various levels and in various ways and appealed to the government to remove the mentally disabled from the institute.

At last, the authorities responded. She was given a place where she could take care of the mentally disabled.

In 1900 Montessori was appointed director of the New Orthophrenic School attached to the University of Rome. It was here that she began a meticulous study of the available research. Her study led Montessori to the works of Jean Jacques Rousseau (1712-1778), who believed sensory experience was the basis for all knowledge. She also studied Pestalozzi, Froebel, Itard and Seguin, who had made pathbreaking research in their time.

She applied what she learnt from her study to the education of her own work. She worked tirelessly to educate her charges. After two years, the mentally challenged children sat for an examination in which normal children also took part. The world was wonderstruck when the disabled children outdid the normal ones.

Though the world felicitated her, Dr. Montessori was deeply troubled. She wondered why the healthy, normal children could not compete with their disabled brothers. This is what set her thinking and led to her discovery of the Montessori Method of Child Education.

7.1 The First Casa Dei Bambini or House of Children

The Montessori Method arose out of the first Casa dei Bambini—what started off as a day-care centre for working class children.

Many years ago, Rome was a capital of a state in very rapid development, which manifested itself in a mania for building. Every small available space was utilised to build houses, every little open square. One of the many was delimited on one side by the old Roman walls which had witnessed many battles and on the other by the modern cemetery. This area was the last place to be filled, no doubt because of the superstition that it was not lucky to live near the dead, for fear of ghosts and also for hygienic reasons.

But probably because of the beautiful and historical situation, one building society decided to stake its money into building there. It was a tremendous scheme, five houses on the scale of palaces, 5 or 6 stories high. But the idea had been too vast so that the society went bankrupt before the buildings were completed and the scheme failed. The work was interrupted and left to stand. There were only the walls with open holes for door and windows, there was no plumbing and the creations stood as a sort of skeleton.

For many years this enormous skeleton remained abandoned and neglected. It became a shelter for homeless beggars, a hiding place for evildoers who wished to avoid recognition and criminals of all sorts, thieves and murderers, took refuge in them. Even the police did not go near them, nor dared to, as they did not know their way in these grim walls of crime and horrors.

It was estimated that in this area at least 10,000 people but there were only very few children—only fifty children. But these children, wild and uncivilised as they were presented a serious problem of damage to the houses. Left alone while the parents went to work, they were free to carry out any wild fancy. So the director of the concern decided that the only obvious things to keep them out of mischief was to collect all the children and confine them.

One room was set aside for this purpose, resembling in every way a children's prison. It was hoped that a person would be found with enough social courage to tackle the problem. Fortunately enough Montessori was approached to take an interest in the work. On the 6th of January 1907 this room was inaugurated to collect the 50 children. Throughout Italy the 6th of January is looked upon as "the" day of feast for the children. It was from then that the real work began.

So it was that on 6th January 1907 the first school under Dr. Montessori's supervision started. It was named casa dei Bambini or 'House of Children'.

7.2 Secrets of Childhood

He was that on 6th January 1907 the first school under Dr. Montessori's supervision started. It was named casa dei Bambini or House of children.

A crowd of children, free from the constricting mould of age-old concepts, beliefs and superstitions, Dr. Montessori and her two in-experienced assistants want to educate them. Then young minds are free to flow along natural channels. Dr. Montessori observes them with an open mind and discover new aspects of child psychology.

House of Children : A large hall with a big armchair and a large cupboard. That's all the furniture there is. There are some scientific materials created by Dr. Montessori. There are two girls and Dr. Montessori teaches them the use of the materials.

Every day the materials were put away after use and locked in the cupboard. Each day saw incidents that opened up new vistas of discovery for Dr. Montessori.

One such incident : One day the girls complained to Dr. Montessori that the children had been disobedient. The previous day the cupboard had accidentally been left unlocked.

When the girls came in the morning they found the children had opened the cupboard themselves, picked up materials of their choice and had started working with them. Dr. Montessori told the girls not to lock the cupboard anymore. Later, she replaced it with a low, open shelf so that the children could easily reach and pick out the materials of their choice.

Another incident. Dr. Montessori had come to visit the House of Children. She observed a little girl absorbed in working with a material called 'Cylinder Blocks'. She tried to attract her attention. She asked the other children to clap their hands. So engrossed was the child that she paid no heed. Dr. Montessori picked up the child as she held the cylinder blocks and went and sat in another place with the child in her lap. Even then the child continued putting the cylinders into the block and pulling them out again.

It was only after she had done it 42 times that the child's concentration broke. From this incident Dr. Montessori inferred that if a child finds some work interesting, they want to repeat it over and over again till they reach perfection.

Another observation. The girls reported that many of the children would not let go of the materials they were working with. Dr. Montessori observed that children come to love the materials they have worked with for a long time.

So it was that each day her observations led to new discoveries. In the light of these observations, she conducted tests and experiments, learning about the character of children step by step.

This is how the Montessori method evolved into a complete philosophy of education.

She also introduced the manipulative perceptual puzzles that she had used with children with developmental delays.

They were fascinated with the puzzles and perceptual training devices. But to Montessori's amazement three or four year old children took the greatest delight in learning practical everyday living skills that reinforced their independence and self respect.

As summarised by Dr. Maria Montessori's student and colleague, E.M. Standing, young children prefer :

- work without compulsion
- spontaneous repetition

- work rather than play
- concentration and self-discipline

Montessori called her discoveries the "Secrets of Childhood".

Let us check our progress on Unit 2.

1. Answer in about 60 words each :
 - (a) What are the secrets of children as mentioned by Maria Montessori.
 - (b) Explain the principles of Self-Education in Montessori Method.
2. Answer in about 250 words each :
 - (a) Discuss about the development of Montessori Method.
 - (b) Write what do you know about the first Casa Dei Bambini or House of Children of Maria Montessori.

7.3 Principles of Self-Education

Dr. Montessori discovered that two qualities were necessary for response from young children a carefully prepared teacher and an environment specifically prepared for the learning capabilities found in its children.

Montessori made a practice of paying close attention to their spontaneous behaviour, arguing that only in this way a teacher know how to teach.

Montessori believed that the educator's job was to serve the child, determining what each one needed to make the greatest progress. To her, a child who failed in school should not be blamed, anymore than a doctor should blame a patient who does not get well fast enough. After all, it is the job of the physician to help us find way to cure ourselves, and the educator's job is to facilitate the natural process or learning.

The Montessori Method offered a systematic approach that translated very well to new educational settings, a love for work with learning materials and freedom and spontaneity.

Principle of self-education

Montessori described this sense of belonging as “Valorisation of the personality”, a strong sense of self-respect and personal identity. She opened up to the world around her and found that mistakes were not something to be feared but rather the endless opportunity to learn from experience.

Children around the world share common or universal characteristics and tendencies, even though each child is a unique human being, who deserves the same respect we would give an adult.

The Montessori commitment to respect each individual child honours the learning process each child must follow as he or she makes meaningful sense of knowledge and skills. Learning is taking place everyday and every waking moment. It happens uniquely for each child. More than being responsible for external and arbitrary content standards, Montessori teachers are also accountable for facilitating the growth of such qualities as character, grace and courtesy, kindness, respect and the development of self discipline.

In keeping with the Montessori way, we honour and respect individual children for their particular approaches and styles of learning. Each child deserves a complete education in which all of her or his unique capabilities are engaged an education we call the Montessori way.

Unit 8 ☐ The Montessori Environment

Structure

8.1 The Prepared Environment

8.2 The Montessori Materials

8.3 The Process of Normalisation

8.4 The Vision of Peace Education

Let us check our progress on Unit 3

Montessori theory postulates that the child develops through stages, going through three environments. The first is the womb, the second is the family. The third Environment is the Montessori Environment—the school or House of children. Dr. Montessori never referred to the third Environment as a school since the environment had to emulate the environment at home. That is why she called in the house of children. In this environment the child sees and handles things with which she is familiar—she sees them at home. Only here they are scaled down so she can easily handle them. There are small mats for the children to sit on (they sit on the floor). In the west, there are rugs instead of mats while in South India, small durrees are used. Obviously, the materials will have to vary according to the culture of the local environment. There are other materials : small stools, napkins for folding, vessels for pouring grain, brooms, foot-mats, jugs, trays and so on. All these are things that the child sees at home but are rarely allowed to use-often because they are too large for them to handle. However, here they are their size, and they use them with eagerness and master them within a short-time.

Apart from imparting household skills that they will use all their life these exercises help strengthen their limbs, increase manual dexterity and eye-hand coordination. This prepares them for the stage when they have to hold and manoeuvre a pencil. These exercises also exercise their creativity.

In a Montessori House the child is given freedom. There is no set routine or time table. The adult or teacher must understand the child's needs. She must observe him carefully. She must know the environment in the child's home and therefore his special needs and work with him accordingly.

The role of the adults will be passive. According to Dr. Montessori, "he must increase and we must decrease". That means the child will continuously take from the adult and grow, while the adult must give him the work and gently withdraw.

The child must be spoken to with love and respect. He must never be commanded, he must be asked if he would like to do the work. Dr. Montessori called it an assistential approach.

In the Montessori system, the child develops through a series of exercises or activities :

1. Preliminary Activity
2. Exercises of Practical Life
3. Sensorial Activity
4. Language Activity
5. Arithmetic Activity
6. Along with these the child's creativity and imagination is nurtured through story-telling, rhymes and art and craft. Each set of exercises is done with a primary aim in mind. But each stage also prepares the child for the next one.

When a child first comes to a Montessori House the initial task is to familiarise him with the new environment and to help him adjust in it. This is done through games, songs and other activities. After the child adjusts to the Montessori environment, the first activities that the child works on are ones that are familiar to him. Sweeping the floor, pouring water into a glass, pouring grain into small vessels from a large vessel, rolling out a mat and rolling it up again, setting a stool, carrying water on a tray. In short, he is given the work he sees, done every day and that he always wants to try. But of course, all the things he uses are made to his scale.

These exercises are called Exercises of Practical Life. On the one hand the children achieve some skills necessary for his personal life, in family life and in social life, on the other hand it helps develop his motor skills and senses. He is ready for the next stage : Sensorial Activity.

Sensorial Activity deals with the senses of sight, hearing, touch, smell and taste. The senses are exercised with the aid of specially designed taste. The exercises develop the senses and help diagnose any sensorial weakness or disability the child may have.

Each activity is first done by the adult and the children observe. Then, when the children come forward to the activity, the adult withdraws and observes from a distance. A child generally is able to detect its own mistakes if not, the adult shows the activity again and the child repeats it. The materials used for sensorial exercises are scientifically designed and precise.

In the same way, the concepts and skills of language (reading and writing) and arithmetic are easily developed using scientific methods and materials, evolved through much research and experimentation, that utilise the child's inborn strengths and potential.

8.1 The Prepared Environment

The prepared environment is Maria Montessori's concept that the environment can be designed to facilitate maximum independent learning and exploration by the child.

In the prepared environment there is variety of activity as well as a great deal of movement. In a pre-school classroom for example, a three year old may be washing clothes by hand while a four year old nearby is composing words and phrases with letters known as the moveable alphabets, and a five year old is performing multiplication using a specially designed set of beads. In an elementary classroom, a small of six to nine year old children may be using a timeline to learn about extinct animals while another child chooses to work alone, analysing a poem using special grammar symbols. Sometimes an entire class may be involved in a group activity, such as story-telling, singing or movement. In the calm, ordered space of the Montessori prepared environment, children work on activities of their own choice at their own pace. They experience a blend of freedom and self discipline in a place specially designed to meet their developmental needs.

Thus Montessori's education method called for free activity within a "prepared environment", meaning educational environment tailored to basic human characteristics and to the specific characteristics of children at different ages. The function of the environment is to allow the child to develop independence in all areas according to his or her inner

psychological directives. In addition to offer access to the Montessori materials appropriate to the age of the children, the environment should exhibit the

- Contruction in proportion to the child and his/her needs
- Beauty and harmony, cleanliness of environment
- Order
- An arrangement that facilitates movement and activity
- Limitation of materials, so that only material that supports the child's development is included.

Since the child learns to glean information from many sources, instead of being handed it by the teacher it is the role of the teacher to prepare and continue to adapt the environment, to link the child to it through well-thought-out lessons, and to facilitate the child's exploration and creativity.

The Prepared Environment is essential to the success of Montessori. There must be just the right amount of educational materials to allow for the work of the child. However, one thing that has become very obvious in our materialistic society in the west, is that TOO MUCH is worse than TOO LITTLE.

The basic collection of didactic materials has been thoroughly tested over many years and has been shown to engage the children as much today as it has, as much in the USA as in other countries. Therefore it is very important to only supplement these materials that are chosen only by an experienced teacher. The environment is arranged according to subject area, and children are always free to move around the room, and to continue to work on a pieces of material with no time limit.

Montessori classrooms provide a **prepared environment** where children are free to respond to their natural tendency to work. The children's innate passion for learning is encouraged by giving them opportunities to engage in spontaneous, purpose ful activities with the guidance of a trained adult. Through their work, the children develop concentration and joyful self-discipline. Within a frame work of order, the children progress at their won pace and rhythm according to their individual capabilities.

8.2 The Montessori Materials

In the Montessori classroom learning materials are arranged invitingly low, open shelves, children may choose whatever materials they would like to use and may work for as long as the material holds their interest, when they are finished with each material, they return it to the shelf from which it came.

The materials themselves invite activity. There are bright arrays of solid geometric forms. Knobbed puzzle maps, coloured beads and various specialised rods and blocks.

Each material in a Montessori classroom isolates one quality. In this way the concept of the child is to discover is isolated. For example the material known as the pink tower is made up of ten pink cubes of varying sizes. The preschool aged child constructs a tower with the largest cube on the bottom and the smallest on top. This material isolates the concept of size. The cubes are all the same colour and texture, the only difference is their size. Other materials isolate different concepts, colour tables for colour, geometry materials for form and so on.

Moreover, the materials are self-correcting; when a piece does not fit or is left over, the child easily perceives the error. There is no need for adult 'correction'. The child is able to solve problems independently, building self confidence, analytical thinking and the satisfaction that comes from accomplishment.

As the child's exploration continues, the materials interrelate and build upon each other. For example, various relationships can be explored between the pink tower and the brown stairs, which are based on matching precise dimensions. Later, in the elementary years, new aspects of some of the materials unfold. When studying volume, for instance, the child may return to the pink tower and discover that its cubes progress as incrementally from one cube centimetre to one cube decimetre.

8.3 The Process of Normalisation

In Montessori education, the term normalisation has a special meaning, 'Normal' does not refer to what is considered to be "typical" or "average" or even "usual". "Normalisation"

does not refer to a process of being forced to conform. Instead, Maria Montessori used the terms "normal" and "normalisation" to describe a unique process she observed in child development.

Montessori observed that when children are allowed freedom in an environment suited to their needs, they blossom. After a period of intense concentration, working with materials that fully engage their interest, children appear to be refreshed and contented. Through continued concentrated work of their own choice, children grow in inner discipline and peace. She called this process "normalisation" and cited it as "the most important single result of our whole work."

E. M. Standing (Maria Montessori—Her life and work, 1957) lists these as the characteristics of normalisation.

- Love of order
- Love of work
- Spontaneous concentration
- Attachment to reality
- Love of silence and
- Working alone
- Sublimation of the possessive instinct
- Power to act from real choice
- Obedience
- Independence and initiative
- Spontaneous self discipline and joy

Montessori believed that these are the truly normal of childhood, which emerge when children's developmental needs are met.

8.4 The Vision of Peace Education

Having spent years, educating teachers to grasp the 'big picture' of the interdependency of all life on earth, Dr. Montessori on her return to Europe after the end of the war, during her final years became an even more passionate advocate of peace education.

Dr. Maria Montessori carried a large vision for the purpose of education—The establishment of universal and lasting peace.

Although she witnessed two world wars and the unleashing of nuclear power, Montessori evolved a living philosophy of education child study methods, age-appropriate curricula and instruction and programme for adult teacher education. In 1940 she wrote : 'Man masters almost everything but himself. He knows almost everything but himself. He avails himself of the most hidden treasures but does not use the immense riches and powers that he within himself'.

This points to the great and urgent task of education. No mobilisation is as complete as that which can be realised by the school. In the past, military service was limited to men of a certain age group. Now more and more people are drawn into the service of war—even women and children.

Montessori schools today seek to help children become independent and self-disciplined by assisting them with a full-development of their unique individual potentials. Montessori teachers do this through child study and by designing classroom and outdoor environments in which children find engaging activities that help them develop habits of lifelong learning—for example, concentration, investigation, collaboration, problem solving and communication.

As Montessori developed her theory and practice, she came to believe that education had a role in play in the development of world peace. She felt that children allowed to develop according to their inner laws of development would give rise to a more peaceful and enduring civilization. From the 1930s to the end of her life, she gave a number of lectures and addresses on the subject saying in 1936.

Let us check our progress on Unit 3.

1. Answer in about 60 words each :

- (a) What are the characteristics of process of normalisation as mentioned by Maria Montessori?
- (b) What was the vision of peace education of Maria Montessori?
- (c) Explain the importance of Montessori Materials in classroom learning of children.

2. Answer in about 250 words each :

- (a) Discuss about Prepared Environment in Montessori Method.
- (b) Mention in brief what do you understand by Montessori Environment.

Unit 9 □ Montessori Method and Other Pre-primary Education System

Structure

9.0 Introduction

9.1 Objectives

9.2 Montessori Method and Other Pre-primary Education System

9.2.1 Kindergarten and Nursery Method

9.2.2 Montessori Method

9.2.3 Comparison between Kindergarten and Montessori Method

9.3 Summary

9.4 Check Your Progress

9.5 Assignment

9.6 Exercise

9.0 Introduction

The two educational methods which have gained popularity throughout the world are 'Montessori' and 'Kindergarten' methods. Montessori method is very significant in the field and child education. The features of this method are—

1. Freedom given to children.
2. Importance given to sense training.
3. To follow the principle of Auto Education.
4. To approve the Theory of Individual Difference.

Montessori Method has gained popularity in our country. Kindergarten and Nursery Method of Froebel has also gained importance. Before independence Pre-Basic education of Gandhiji have developed in different parts of our country. Gandhiji expressed his view in his method regarding the children 3 to 6 years of age. So many schemes of Central Government have undertaken after independence. Education, Health and Nutrition of

children of age 3 to 6 years and Health and Nutrition of the mothers have undertaken under the scheme of ICDS (Integrated Child Development Scheme)—consisting of ‘Anganwaris’ and ‘Balwaris’. Rhymes and recognition of Alphabets etc. are taught to small children.

Another scheme of Central Government is—ECCE (Early Childhood Care and Education) through which Health and Education have been undertaken for 3 to 5 years age of children in our country. Beside this, the education of the children are brought under SSK. NGOS’ have also come forward in this regard. As a result children of pre-primary level are getting enough benefits as there is a co-operation between Government and NGOS’. Pre-primary level has been included under Sarba Sikhsha Abhijan and Formal education. Therefore we can say that at present day we have become conscious about the expansion of pre-primary education which is desirable to all of us.

If we compare the educational system of Montessori and Froebel then we find that there are so many similarities among the features of both the system. Such as—

1. In both the methods child’s freedom has been accepted.
2. To make the children active.
3. To lay emphasis in the aptitude of play among children.
4. In both the methods emphasis has been given to sense training.
5. Both Montessori and Kindergarten methods are essential for pre-primary education.

Dissimilarities

- (1) At the Kindergarten Method while implementing play way method some specific plays have been arranged. But in Montessori Method the children are allowed to select play independently.
- (2) Kindergarten is a Group Teaching Method but in Montessori Method Individualized Instruction is followed.
- (3) In the Kindergarten method the objective of teaching Nature Study is to identify oneself with the spiritual forces of the world. But in Montessori Method the aim of teaching Nature Study is to make children active.
- (4) In Kindergarten Method maintaining discipline lies with the teachers, but in Montessori Method spontaneous discipline is given importance.

- (5) In Kindergarten method the teachers are responsible for some controlling issues but in Montessori Method the teacher plays the role of a Directress.

Therefore we find that though there are many similarities in the methods of Montessori and Kindergarten but there are dissimilarities also.

These two methods have gained popularity in the world and in our country and the small children will gain more facilities in future which is desirable among us.

9.1 Objectives

Students will be able to acquire the following competencies through this unit.

- To discuss the different pre-primary education system in our country.
- To tell about the features of Montessori Method.
- To explain the significance of Montessori Method in child education.
- To discuss the objectives of Froebel's Kindergarten and Nursery Method.
- To explain how far Froebel's play way method is essential in child's education.
- To indicate the features of Froebel's Kindergarten Method.
- To compare the feature of Montessori and Froebel's educational principles.

9.2 Montessori Method and Other Pre-primary Education System

Throughout the world at the pre-primary level the two education system which have gained popularity are—Montessori Method and Froebel's Kindergarten and Nursery Method.

In our country Gandhiji spoke about Pre-Basic education for the children below 7 years.

Beside this, scheme of Central Government ICDS (Integrated Child Development Scheme) or through 'Anganwaris' and 'Balwaris', the education and their Health and Nutrition, mothers' health and nutrition of 3 to 5 years age of children are being protected

in different parts of our country. Children and their mothers are being benefited through this scheme. Recognition of Alphabets, Rhymes, songs and physical exercises are performed through this scheme. In rural areas children enjoys pre-primary education through this scheme.

One of the objective of NPE (1986) of Central Government is—ECCE (Early Childhood Care and Education) the aim of which is to ensure the education of upper-primary level children specially those who are first Generation Learners and to help the working mothers and girls.

Beside this, in West Bengal Sarba Sikhsa Abhijan and Sishu Sikhsa Centres are performing the duties of pre-primary education of children. Even at present day pre-primary level has been included in the formal schools—the benefit of which the rural children are enjoying. Montessori and Kindergarten Method are generally followed in cities but the pre-primary education which existed in rural areas is traditional and teacher-centric. Freedom, play-way education, handicrafts etc.—such facilities are not available there.

For full development of a child in Montessori Method emphasis has been given on freedom. An other feature of this method is—education is to be imparted through self-activity. Children will play with Didactic Apparatus, errors will be rectified by themselves. One directress will lead them, but she will not interfere much. One of the major feature of this method is ‘Principle of Auto Education’. Sense Training is given much importance in Montessori Method.

These features of Montessori Method are not followed in other pre-primary education. Montessori Method is quite different from others and that is why this method is known only as Montessori Method.

9.2.1 Kindergarten and Nursery Method

This method was initiated by the German educationist—Froebel. To implement his educational philosophy he founded a school in 1837. He named the school as ‘Kindergarten’. Later on his method was known as ‘Kindergarten Method’. The meaning of Kindergarten is ‘Childrens Garden’.

He was not in favour of using the term ‘Institution’ or ‘School’ in the field of education. According to his view child’s self-activity is the only method. Child will act in dependently and through this he or she will reach the higher ideals. Therefore the aim of Kindergarten

Method is child's activity through freedom. They will dance, sing and will play with different toys. Children are like small plants in the garden, as the gardener who tend of every plant in the garden, pour water, so as the teachers with care will take the children in the development of their life.

The aim of Froebel's education is to realise God through self-realization. He tried this in his educational planning.

Characteristics of Kindergarten System

- (1) The main feature of this method to educate the children through 'self-activity' and 'play'. With this aim action song, song etc. are included in this method.
- (2) Emphasis is also given to Sense-training in this method. Through senses child will gain knowledge. Through senses relation grows with outer world. Froebel emphasised on child's sense training from the childhood. For this reason the arrangement is there in. Froebel's method to play with different toys. These are known as 'Gifts'. Froebel said these 'gifts' represent some symbols to the children. Gifts consists of wooden pieces in different geometrical shapes, sticks, cotton, thread, balls of different colours etc. Children are easily attracted to these small toys, through which child gets ideas or concept of colours, shapes etc.
- (3) Emphasis is given on Nature Study in Kindergarten Method. To identify oneself with all the natural forces of the world it is essential to acquaint with the world of nature. Froebel laid emphasis to the Nature study at the initial stage.
- (4) Enjoyment is the main aim of Kindergarten Method. So children gets opportunity to play in this method. Froebel in order to co-ordinate play with gifts he has arranged different types of activities. He has given the name 'Occupation' to these gifts. To fold papers of different types, to prepare different toys with papers, to prepare flowers with papers, sewing etc.—all these types of activities are available in Kindergarten method. These are the aids and appliances of Kindergarten Method.
- (5) The main feature of Kindergarten Method is song. Children are allotted any sorts of activities with different rhythm of songs. Children are easily attracted to the rhythm in a natural way, therefore they perform their activities with great interest and enjoyment.

The most important feature of Kindergarten Method is that through this method it is possible to unfold the multi-dimensional development of Life and the student learns all the techniques which are essential for life, but not in a passive way but by taking part actively in every sphere.

In this system of education child's life is established in a natural setting. As a result they gather experiences of knowledgeable aspect and social aspect at a same time. For this reason ideals of life develop among the children. Kindergarten method helps in developing balanced and consistent personality among the children.

Therefore this method is introduced almost all the countries of the world to educate the children from 3 to 6 years of age. As pre-primary education has gained importance in our country but this method has introduced specially in cities.

9.2.2 Montessori Method

Montessori Method was introduced by an Italian—Dr. Madame Maria Montessori. Montessori was influenced by the educational thinking of Rousseau. She emphasised on child's freedom. Like Froebel Montessori also emphasised on sense-Training.

Montessori left her profession of Medicine and engaged herself in educational research throughout her life, and to implement her educational theory she established a school in 1907. She named her school as 'Casa-dei-Bambini' or 'House of Children'. The chief aim of this method is to unfold the innate capabilities of a child through activity. Like Froebel's 'Gift and Occupation', she prepared different types of educational appliances; she named them as 'Didactic Apparatus'. The appliances are so planned that the children will take the responsibility of sense-training through those appliances, they will rectify their errors by themselves.

Features of Montessori Method

- (1) The main feature of this method is to give enough liberty to a child. The major aim of this method is full development of mind of a child. If by regulation the innate capabilities of a child are controlled then natural development of a child will be deterred, discipline will come through freedom.
- (2) In Montessori Method more emphasis is given on sense-training. She spoke about the improvement of knowledge and activity. For the improvement of knowledge she has discovered different kinds of Didactic Apparatus. On the other hand for

the improvement of activity different kinds of physical exercises, handicrafts have been included in this method. To work in a garden, to rear animal and birds etc., through these works there will be improvement of activities on one hand, and on the other hand social qualities will be developed.

- (3) Child's education will be through active efforts. Child will be given liberty to work. They will learn through activity. They may make errors but they will rectify by themselves. Montessori has introduced Didactic Apparatus to give the children opportunity to work suitable for sense-training. In such Didactic Apparatus there is a scope for rectifying their own errors. When children will play with those Didactic Apparatus one Directress will lead them. The Directress will interfere as less as possible the work of the children. Therefore the main feature of this method is to follow the principle of Auto Education.
- (4) The most important feature of Montessori Method is to accept the 'Theory of Individual Difference'. Every child bears his/her own identity and preserve differences for this identity. Theory of education should be such that child's identity cannot be disturbed. For this reason Group Learning in the classroom is not given place in this method. Every child should be given opportunity to develop according to his/her ability and differences. In this sense it is to be said that the main aim of Montessori Method is Individualized Instruction.

9.2.3 Comparison between Kindergarten and Montessori Method

At the present age of child-centric education Montessori Method creates a new revolution. This method has introduced in all countries of the world. There is a similarity between Montessori Method and Froebel's Method in many respect. E.g.-child's freedom has been accepted in both the methods.

Both of them have agreed that child's education is possible through activity. To implement this activity 'Gift and Occupation' in Froebel's Method and various 'Didactic Apparatus' in Montessori Method have been arranged. Both of them said about Play-way education. Both of them laid emphasis on Nature Study.

In both the methods emphasis has been laid upon sense-training. If we consider from different angles we will find that there are lot of similarities between Montessori and Kindergarten Method.

Features of Kindergarten and Montessori Method

Kindergarten Method	Montessori Method
Similarities :	
1. Freedom is given to child.	1. Freedom is given to child in this method.
2. For learning child's self-activity has given importance.	2. In Montessori Method Child's activity has given importance.
3. To make child's active 'Gift and Occupation' are used.	3. Didactic Apparatus has been used to made child's active.
4. In Kindergarten Method Play-way principle has been implemented.	4. In Montessori Method child's aptitude has given importance.
5. In this method emphasis has been laid upon sense-training.	5. Much importance has been given to sense training.
6. This method is suitable at pre-primary education.	6. This method is applicable to pre-primary education.
Dissimilarities :	
1. In Kindergarten Method maintaining discipline lies with the teachers.	1. In Montessori Method emphasis has been given on spontaneous discipline.
2. Teacher has to bear the responsibility of controlling aspect.	2. In this method teacher plays the role of a Directress.
3. To implement the 'playway' principle certain specific plays have been arranged in this method.	3. In Montessori Method child is allowed to select play independently.
4. Kindergarten is a Group Teaching Method.	4. In Montessori Method Individualized Instruction has been followed.
5. The aim of teaching Nature Study is to identify oneself with the spiritual forces of the world.	5. The aim of teaching Nature Study is to made the child workable habit active.

There are lot of differences between Kindergarten Method and Montessori Method. In Kindergarten Method the responsibility of discipline lies with the teacher. In this method teacher controls the activity of a child in many ways through specific 'Gift and Occupation'.

But in Montessori Method Directress does not control in such a way. Children can select plays as they desires in this method. In Kindergarten Method emphasis has been laid upon all round development of a child. In this method a child is placed in a social environment for the development of social qualities. But in Montessori Method emphasis is laid upon individual development. Beside this, children learns Nature Study in both the methods with two different objectives. So we find there are dissimilarities in various ways in both the methods.

At present days lot of propagation has done centering round these two methods. The major problem of these two methods is the 'Gift and Occupation' and 'Didactic Apparatus' which are used in our country are so meagre to achieve complete knowledge to the children. We have to think about it. The chief aim of ours is to implement the proper education of these two methods at the pre-primary level.

9.3 Summary

Madame Montessori's Method and Froebel's Kindergarten and Nursery Method have gained enough popularity throughout the world.

Montessori was influenced by Rousseau's educational thinking. The features of Montessori Method are—

1. Child's Liberty.
2. Sense-Training.
3. Auto Education.
4. To accept the Theory of Individual Difference.

Montessori Method has gained popularity in our country. Froebel's Kindergarten and Nursery Method has also gained importance in our country. Beside this Gandhiji's Pre-Basic education, 'Anganwaris' and 'Balwaris' run by the Central Government, ECCE etc. through which the children from 3 to 5 years of age at the pre-primary stage are enjoying the benefits of education in our country. Moreover, children are getting the facilities of education through SSK. NGO's also have come forward in this regard. As a result the children at the pre-primary level are getting enough benefits through education with the help of Government and NGO's.

Pre-primary level have been included in Sarba Sikhsha Abhijan and Formal education for which the children in rural areas are enjoying benefits out of it.

We can say that we have become conscious regarding pre-primary education now-a-days and Government through different schemes are trying to expand pre-primary education.

If we compare the features of Montessori and Froebel's Method we will find there are lot of similarities and dissimilarities.

Similarities

There is a similarity between Montessori Method and Froebel's Method in many respect.

Child's freedom has been accepted in both the methods.

Both of them have agreed that child's education is possible through activity. to implement this activity 'Gift and Occupation' in Froebel's Method and various 'Didactic Apparatus' in Montessori Method have been arranged. Both of them said about Play-way education. Both of them laid emphasis on Nature Study.

In both the methods emphasis has been laid upon sense-training. If we consider from different angles we will find that there are lot of similarities between Montessori and Kindergarten Method.

Dissimilarities

There are lot of differences between Kindergarten Method and Montessori Method. In Kindergarten Method the responsibility of discipline lies with the teacher. In this method teacher controls the activity of a child in many ways through specific 'Gift and Occupation'.

But in Montessori Method Directress does not control in such a way. Children can select plays as they desires in this method. In Kindergarten Method emphasis has been laid upon all round development of a child. In this method a child is placed in a social environment for the development of social qualities. But in Montessori Method emphasis is laid upon individual development. Beside this, children learns Nature Study in both them methods with two different objectives. So we find there are dissimilarities in various ways in both the methods.

9.4 Check Your Progress

1. Who has invented 'Didactic Apparatus'?
(a) Gandhiji (b) Froebel (c) Montessori (d) Rabindranath.
2. Who has given importance to Play-way method?
(a) Radhakrishnan (b) Montessori (c) Vivekananda (d) Froebel.
3. Write short notes on :
(a) ICDS
(b) ECCE
(c) NGO.
4. Answer the following questions :
(a) Explain the significance of 'Didactic Apparatus' in child education.
(b) Discuss the role of 'Anganwaris' and 'Balwaris'.

9.5 Assignment

Discuss the features of both Montessori and Kindergarten Method.

9.6 Exercises

Answer the following questions :

1. State the different pre-primary system of education in our country.
2. Explain the necessity of Montessori and Froebel's method in child's education.
3. Discuss the similarities and dissimilarities in the features of Montessori and Froebel's Method.

Paper-II

Unit 1 ☐ Child Psychology

Structure

- 1.1 Introduction**
- 1.2 Objectives**
- 1.3 Meaning of Psychology**
- 1.4 Meaning of Child Psychology and Its Nature**
- 1.5 Maria Montessori's work on Child Psychology**
- 1.6 Fundamentality of Montessori's Psychology**
- 1.7 Let us sum up**
- 1.8 Exercise**

1.1 Introduction

In the past Psychology was regarded as a part of Philosophy. In comparison to other sciences the discussion on Psychology started much later. As a result of continuous efforts of different thinkers Psychology has been able to gain recognition as a separate field of knowledge at present. With the passing of time Psychology has been lifted to the stage of science and regarded as a very popular subject. Gradually the subject matter and branches of Psychology have been extended. Child Psychology is a main brand of Psychology. It is absolutely necessary to know Psychology to give suitable training to any child. Child Psychology is a compound word which is composed of two words 'Child' and 'Psychology'.

Considering the importance of this branch of Psychology in education this unit has been included. So the present unit is discussed in brief as the preliminary identity of the meaning and nature of Psychology and the work of Montessori on child Psychology and fundamentality of her work.

1.2 Objectives

Studying this unit the learners will be able to

- to give the definitions of Psychology and child Psychology.
- describe the meaning and nature of child Psychology
- give an idea of Montessori's work on child Psychology

1.3 Meaning of Psychology

In the past Psychology was regarded as a part of Philosophy. Greek Philosopher Aristotle for the first time recognised Psychology as a separate science in his book, 'De Anima'. The English synonym of Bengali word 'মনোবিজ্ঞান' is Psychology. This word 'Psychology' is built up of the combination of two Greek words. These two words are 'Psyche' which means soul and 'Logos' which means 'reasonable information' or 'science'. So the ancient Philosophers regarded Psychology as the science of exercising soul or science related to soul.

Many did not support this meaning of Psychology, because difference of opinion relating to the right nature of soul cropped up among the philosophers. In their opinion soul is not worthy of observation and experimentation. So the real nature of soul is not known. According to them no soul centric science could not be built up. So it is not also proper to call 'Soul of Science'. Realising this incompleteness the Psychologists have made mind the subject matter of Psychology in place of soul. They have accepted Psychology as the science of mind. Through the definition of Psychology is more materialistic than the science of soul, this definition is discarded later on. Mind is also indistinct like soul and an abstract idea which is not worthy of observation and experiment. In the later part of the nineteenth century the psychologists like Locke, Hobbes. Bain etc made further analyses and commented that which ever of mind is visible is the conscious mental process. We realise the existence of mind in consciousness. William James established this theory more firmly. According to the opinion of these psychologists our knowledge about the existence and nature of consciousness is far more certain (ensured) and well destined than mind. In their opinion Psychology is the science of consciousness. If this definition of Psychology is accepted, some difficulties will crop up. Not only conscious mind but also pre conscious

and subconscious mind is also included in it. So Psychology is the Science of Conscious mind—this definition is partial. In the opinion of Mc. Dougall it is not possible to analyse the mind of the retarded persons if Psychology is regarded as the science of conscious persons. The behaviour of the child and the animal can not be explained. Besides this, the intuition method being very much individual centric, the evaluation of the collected information is not possible.

In the beginning of the twentieth century the psychologists tried to practise Psychology in the impersonal method. These Psychologists gave a new definition to Psychology. According to them Psychology is the science of Behaviour of animals. William Mc. Dougall, Watson, Woodworth etc. are the supporters of this theory. Mc. Dougall in his book 'Psychological Psychology' (1950) mentioned—Psychology as the practitioner science of animal behaviour. American Psychologist J.B. Watson gave the best definition of Psychology. In his opinion Psychology is the practising positive science of animal behaviour. In fine, this definition of Psychology has been accepted by all the Psychologists of the world.

It is found from the aforesaid discussion that the concept of Psychology in the different stages of gradual evolution has been changed again and again. At first, Psychology was the science of soul, next it was termed as the Science of Mind, then after it was termed as the Science of Consciousness and last of all it is established as the Science of Behaviour. In this context Psychologist Woodworth (1948) remarked, “First Psychology lost its soul, then its mind, then it lost its consciousness. It still has behaviour of soul.”

Question : 1 : From which Greek word has been Psychology originated?

2. Mention the best definition of 'Psychology'?

1.4 Meaning of Child Psychology and Its Nature

A few French and German Scientists established Psychology as a separate unfoldment. The ancient researchers of Psychology regarded the children as immatured or under developed adults. The minds of the children were not studied separately.

When the child-diseases were proved quite different from those of the adults the utility of the study of child-mind became relevant in Medicine. This inspired the researchers of the Science of Medicine to research on the children of the particular age in the primary

schools. Maria Montessori was one of the first ranking researchers. The work experience of the medical practitioners of her Primary Schools took an important role in the study of the children.

Psychiatry (which is the Science of Psychology) and which makes diagnosis of mental diseases in this branch of Medical Science and discusses and researches about medical treatment) shows the next path to study the children. As a result of the development of this branch in the Science of Medicine the Psychiatrists discovered the presence of the unconscious mind. At the same time they came to know that the mental experiences of man's boyhood can influence his/her mind and behaviour in the grown up age. Initially this advances towards the researcher of child psychology because the mental activities of the children lie in the unconscious stage.

So the psychologists feel the necessity of a separate branch of psychology to understand the mind of the human children and that is why they are engaged in various experiments, observations and researches in the laboratory. As a result a separate branch of psychology is created to gain the clear idea about the unfoldment of the child-mind and the stage of its unfoldment, which is known as the child-psychology or unfoldment psychology.

Unfoldment Psychology is that branch of Psychology which makes the well organized scientific researches on the Physical and Psychological change of man with the gradual increase of age. The objective of this branch of Psychology is to make a thorough observation and discussion about the child and the concerning subject related to the childhood unfoldment. Specially, the work of child psychology is to cultivate the Psychological unfoldment of the child. Its subject matter is the various mental processes of the child, its emotion, sentiment, imagination, thoughts, memory, intelligence etc. Mr. Majumder (1993) opines, "The branch of Psychology in which various aspects of the child relating to the development of its body and mind and associated problems from the very birth to 18 years of age are analysed and researched, is called Child Psychology or Minor Psychology."

In the initial stage, though Developmental Psychology reveals as the associated field of the unfoldment of the child and childhood days, this special field of Psychology has extended the scope of discussion by including the revelation of the adolescent to the adults even the principal men.

The objectives of Psychology are as follows :

1. To observe the changes taking place from one phase of the unfoldment of the child to the other. As for example, the change in behaviour, change in interest, change in demand, change in emotion, change in the fixation of the objective.
2. To find out in which circumstances the changes take place.
3. To determine how these changes influence the behaviour of the child.
4. To ascertain whether forecast will be made about the changes.

Test your progress :

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1.5 Maria Montessori's work on Child Psychology

Madam Maria Montessori was born in Italy in 1870. She obtained the medical degree in 1896 as the first lady in Italy. After passing the Examination in Medicine she was appointed an Assistant Medical Practitioner in a Psychiatric clinic under Rome university. During this time she was attracted by the experiment of the French Doctor Senguin on mentally retarded children. Their way of medical treatment by Senguin was to make these children active with the movement of their sense organs. After this she was appointed Director of Arthochronic School in Rome and engaged herself in the experiments and observations relating to education. She gave a full shape to the method of Senguin. In this regard the life of Helen Keller inspired her. In 1903 she set up Casa-De-Bambani or 'Sisu Niketan' to apply her Theory of Education.

Among the theorists of Pre-childhood condition Montessori was the first to present a scientific theory. In order to explain the conception of the Children's House rightly she took the assistance of Life Science and Psychology. She observed that there is the co-ordination (similarity) in the unfoldment (development) of the child's Physical and intellectual with that of other animals. In the opinion of Montessori childhood is such a stage in which the potentialities of the child lie dormant and these help in the creation full fledged personality later on. She opines that the child's mind is not an empty vessel that awaits fulfilment in the school. The child's mind and brain are quite different from the grown ups just as the tadpoles are different from toads (frogs), but both are included in the same species, but one remains in the initial stage of unfoldment.

Her contributions to establish Child Psychology as a separate science are admitted without any question. She believes that every child is the possessor of its own characteristics and inborn aptitudes and even child maintains individuality from its inborn qualities. She adds that as a child is a neutral individual with its own aptitudes, it is to be educated quite separately according to its capability. She also opines that every child will unfold itself according to its own capability. The basic principle of Montessori's Psychology is the importance of child's individuality.

Montessori attached importance on the subjects like the reformation of sense organs, theory of liberty, self enterprise, self learning, Didactic apparatus, Association, Recognition, Recall, planes of development, phases of development, prepared environment, absorbent mind, normalization etc. in her Child Psychology.

Test your progress :

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1.6 Fundamentality of Montessori's Psychology

Montessori's Psychology is unique from different angles.

1. Its origin is very much fundamental. It is not theory based, rather it is based on the discoveries of the real nature of the child .
2. The way in which Montessori has defined is fundamental.
3. Her method of research is fundamental because—
 - (a) She observed the child in the ideal environment
 - (b) She verified her conclusions
 - (c) Her observations were based on the person and his life time.
 - (d) Observed the child completely and while heartedly.
 - (e) Observed various kinds of children of different classes.
 - (f) Tried to understand how suitable environment is to be created for the unfoldment of the child through the experiment.
4. She realised that the advancement of Psychology and the child's progress in Education, both of which are dependent on each other, take place simultaneously.
5. Her subject matter of research is different from the subject matter of the Psychological doctrine.

Test your progress :

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Unit 2 Child's Growth and Development

Structure

- 2.1 Objectives**
- 2.2 Growth and conception of Development**
- 2.3 General rules of Growth and Development**
- 2.4 The stages of Development**
- 2.5 Determiner of the flow of Development : Heredity and Environment**
- 2.6 Montessori's theory on Child Development**

2.1 Objectives

By studying this unit you will be able to

- give an idea about the growth and development of the child.
- determine the difference between the child's growth and development.
- mention the stages of development.
- explain the determiner of the flow of development.
- discuss about the theory of Montessori's child development.

2.2 Conception of Growth and Development

We can notice different kinds of change in the child from the very birth of the child. Different kinds of changes take place in man while going to accommodate with the changing environment. With these many sides changes two conceptions are invariably connected. These are Growth and Development. Many use growth and development in the same meaning but from the point of view significance there is difference between the process of growth and development. We understand by growth as the change in shape and size which is worthy of measurement. Again we mean by development gradual change in a person, which is not limited to physical change. Specially we mean by development the change in size and with this proficiency in activity. Development causes quantitative and qualitative change in a person. When we say that the child's physical growth occurs, we mean or want

to mean how much the child's hands, feet and other limbs have been developed in length and breadth. But if we say that the physical development of the child has taken place, we will then understand the growth of the child in length and breadth as well as how far the child's work efficiency has developed. Besides this, growth is a temporary process, but development is a life long process and does not end in the stoppage of growth. Even after the end of the growth process, the development process goes on. Development is possible as a result of growth but growth is not development. If we want to know the meaning and conception of growth and development more clearly, we will have to understand the difference in growth and development. The differences in these are noted below :

Growth	Development
1. Growth is the change in shape and size.	1. Development is the change in shape and activity.
2. Growth is measurable.	2. The different sides of development are observable.
3. Growth ends in পরিনাম।	3. Development is a life long process.
4. Growth is ordinarily called physical change.	4. Development is used in all round changes in the Physical, Mental (Psychological) Social etc. changes.
5. Growth is quantitative change.	5. Development is a qualitative change.

Test your progress :

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2.3 General Rules of Growth and Development

Though conceptionally Intelligence and Development (unfoldment) are different, one is the substitute of the other and both in various fields are used in the same meaning. In this view the general rules of these are discussed below :

- Growth in different ages is different.
- In case of a particular individual the difference in the rate of growth is seen.
- Growth and Development are quite personal process.
- Growth takes place as a result of the influence of heredity and environment.
- The process of development takes place following a rule (law).
- Development is a continuous process.
- The process of Development always takes place serially.
- The process of life development is favourable to unity.

2.4 The Stages of Development

In order to cultivate the development in individual life, different Psychologists have divided it in same stages from the point of view of age and developmental characteristics. The difference in opinion is noticed among the Psychologists in the division of stages. Some Psychologists have divided life according to age while some psychologists divided life according to education level. Of course if we review the explanations of the psychologists, we get the following stages of development.

Stage	Time limit
● Pre-natal	280 days in the womb at the time of delivery
● Peri-natal	
● Post-natal	
● Infancy	First two years
● Early childhood	2-6 years
● Late (Post) childhood	6-11 years
● Adolescence	11/12-18 years
● Adulthood	After 18 years

Test your progress :

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2.5 Determiner of the flow of Development : Heredity and Environment

It is seen while practising the process (flow) of development in life that the human life enfolds and that enfoldment takes place from various angles. Again there lies the difference in this unfoldment process. The primary question is to the Psychologists how the nature of human development (unfoldment) is controlled. What is the aptitude during the birth time that controls this development process, or does the environment in which the child lives control the process of life development? So there have been many discussions about the importance of heredity and environment in the case of Psychology. Some opine that the influence of heredity is immense in the determination of human characteristics. Again some hold the view that only environment can determine human characteristics. Of course at present after much experiments and observations the psychologists have concluded that any one of the materials cannot be said to cause the development of man. The actions of both heredity and environment can determine the development of man and individuality.

The environment of man will determine if the possibilities as heredity with which man is born will be fully developed. The more the environmental possibilities are favourable for development, the more their development will be smooth. Again on the other side man's heredity will determine how far environment will be favourable in the development his life. If heredity is of low standard, the development in man's life cannot be of high standard, how much the environment is of superior quality. What is practical is that the development in man's life depends on the mutual actions of heredity and environment.

Test your progress :

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2.6 Montessori's theory on Child Development

Montessori at last found out a separate theory on Child-Development after spending a long time with the children to in order to know the process of children stream of unfoldment.

She has divided the Stream of Development in a person in four plans which are called Four Plans of Development. Maria Montessori has given a complete idea about the stream of human development through this Four Plans of Development. This theory mainly refers to the stream of development from the child's birth to the grown up age. In the opinion of Montessori Four Plans of Development are as follows ;

1. The First Plan : Infancy (0-6)
2. The Second Plan : Childhood (6-12)
3. The Third Plan : Adolescence (12-18)
4. The Fourth Plan : Maturity (18-24)

1. The First Plane : Infancy

This Plane is extended from 0-6 years. Montessori has again divided this Plane in to two parts—(i) The Spiritual Embryo (0-3 years), (ii) The Conscious Worker (3-6 years).

It does not appear that the child at the time of its birth possesses any psychological traits or it has the power to carry on anything. According to Montessori every child possesses the same tendency or state of mind. Montessori has named this mental state as Absorbent mind. Though it seems that the child is in static, motionless and void condition, the child has all the latent potentialities and possibilities in it which expedites its development after wards. Though the child seems, to be indifferent and passive at this stage, practically during this time the child contains all powers in it. So this period is called The Spritual Embryo. During 0-3 years the fundamental powers of man are formed separately in the child, as for example the power of language, the power of the movement of limbs, the power of sensibility etc. In this situation she has called the child as unconscious creator.

The second stage of the child in its childhood begins from the 3 years of age. In this three years of age the child's life seems to start a new. In this plane (stage) the child tries to dominate its influence on the environment. Under such circumstances the child consciously and willingly begins to work. The child likes to do the different works through plays. The child tries to perform all work perfectly. The child's hand is directed with its intelligence and brain. The child's hands are always active. The children keep themselves engaged in the constructive works all the time and help in the development of individuality. If the child gets the opportunity to do its work independently during this time and if the child is given the chance to develop naturally, it becomes possible to unfold the personality in it later on. In the language of Montessori the natural development (unfoldment) of the child is called naturalism and Montessori called this Plane as the Plane of building character.

Before attaining the age of three, the various possibilities of a child originate in it and from 3 (three) years to 6 (six) years of age, the possibilities in the child became developed (unfolded). The conscious mind of a child does not work before three years of age, but after 3 (three) years the work which the child does, is done with its conscious mind. For this reason Montessori opines that the child begins its life anew at the age of 3 (three).

2. The Second Plane : Childhood (6-12) :

This plane extends from 6 (six) years of age to 12 (twelve) years of age. Montessori has called this plane as the calm phase of uniform growth. During this phase both the different mental and physical strength of the child are extended. During this time from the point of view of physical development the teeth of the shield begin to fall off and permanent teeth begin to grow and its hands become longer. During this time the power of running,

jumping etc. increases. The children can not keep themselves inactive for long. The children of this age become much advanced in respect of mental development. The power reasoning and sense of imagination are noticed during this time. The development of morality, social values and intelligence is noticed in the child at this phase. Particularly the power of memory remains comparatively sharp during this phase. The tendency to play and to work anything remains very strong during this age. The child wants to establish itself in the group and get love from all. Montessori says about the second phase of development, “The child of the Second Plane is hungry for culture, which means for knowledge and understanding; the knowledge and understanding of the world built by nature and of that built by mankind. He is endowed with the necessary capacities : the power of imagination, the power of abstracts thought and reasoning, physical strength and health.”

3. The Third Plane : Adolescence (12-18) :

This plane is extended from 12 years of age 18 years of age. This phase of life is known as Adolescence or the advent of youth period. In the opinion of Montessori during this plane the rapid change in body and mind of the boys and girl's is visible. Mental unrest and difficulty in concentration are noticed in the boys and girls and at the same time the unfoldment of the power of creativity, conception of justice and demand of self freedom are also found in them. In this context Montessori says, “This is the time when the social man is created but has not reached full development, this is the time, the sensitive period, when there should develop the most noble characteristics that would prepare a man to be social, this is to say a sense of justice and a sense of personal dignity.” That the grown ups of the society should consider their opinion with importance is a demand of this kind which works in the adolescence. In going to explain the demand of Adolescence she has used the word ‘valorization’.

In the opinion of Montessori Adolescence is the most important and critical period in human life. During this phase of life various anxieties, complexities, doubts, hesitations etc. are noticed. In this context Montessori says, “From the psychological point of view this is also a critical stage. There are doubts, hesitations, violent emotions, discouragement, and unexpected decrease of intellectual capacity.

4. The Fourth Plane : Maturity (18-24) :

Montessori has named the period from 18 (eighteen) years of age to 24 (twenty four) years of age as the Maturity Stage. Montessori speaks little of this stage. She has called this stage of life as the study period in the university. In this phase of life a person wants to be self dependent financially and free and tries to keep moral equality along with it.

Test your progress :

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Unit 3 □ Development Characteristics of the Pre-school Children

Structure

3.0 Objectives

3.1 Introduction

3.1.1 The Stage of Physical Development

3.1.2 Body Growth in Pre-School Stage

3.1.3 Psychomotor Development and Learning

3.2 Social Development

3.2.1 Development and characteristics

3.2.2 Social Development in Childhood

3.2.3 Social Development in Early life

3.3 Cognitive Development

3.3.1 Stage of Sensory-motor thinking

3.3.2 Pre-Conceptual Stage

3.3.3 Stage of Intuitive thought

3.3.4 Practical Activity Stage

3.3.5 Period of Regulated Formal Operation

3.4 Emotional Development

3.4.1 What is Emotion?

3.4.2 Characteristic of Emotion

3.4.3 Emotional Responses

3.4.4 Emotional Expression

3.4.5 Fear and Anxiety

3.4.6 Way to remove Fear

3.4.7 Emotional Development

3.5 Role of Parents

- 3.5.1 Some duties of Parents**
- 3.5.2 Pre-Primary social firmness**
- 3.5.3 How to acquire the Pre-Primary skills**
- 3.5.4 Role of Pre-Primary Workers**
- 3.5.5 Duty of the teachers**
- 3.6 Summary**
- 3.7 Exercise**
- 3.8 Books**

3.0 Objectives

After studying the characteristics of the child's social, psychological, emotional and Physical development, you will be able to know, understand and write the following traits :

- You will know how the physical development of a child from 0-6 years of age takes place.
- You will come to know which subjects are very important in case of physical development.
- You will learn how the psychological and cognitive development of a child takes place.
- You will understand how the social development of a child takes place.
- You will come to know about the role of the parents and the teachers in the all round development of the child.

3.1 Introduction

With the Physical, Psychological or Intellectual development, emotional and social development are equally important in the all round development of the child. Just as nutritious and well balanced food is required for the physical development, so games and sports, rest and vaccination as per rule are also necessary. The experience of the child along with its inclination work together for its intellectual development. The close association of the parents is absolutely necessary for the psychological development of the child. The

social dealings of the child begin at home. The child's social outlook starts with the imitation of its parents. The child's social association unfolds (develops) with its dealings with his friends and playmates gradually. The child's all round development depends much on its home environment and dealings with its parents. The smooth physical, psychological and intellectual development are absolutely necessary for a child's becoming an ideal man in future.

Physical Development :

In the field of controlling the behaviour of personal life the development of physical limbs and their movement is specially important. In the span of life from mother's womb to death the development in various stages can be noticed. If the characteristic of children's physical development is observed, it will be found that the development of the upper part of the body takes place earlier than that of the lower part. Besides this the physical development depends much on the weather. Rapid physical development is noticed in about three years from birth. Later on this development process goes on slowly. Though various researches on children development take place outside India, such researches are scarcely done in India. In our country Department of Psychological Foundation, a Psychological Branch of National Institute of Education has started to research on this subject.

3.1.1 The stages of Physical Development

0-2 years of age—the child within two or three months after birth the child completes responses with the whole body under any condition or circumstances. During this time the power to make all the responses is found in children. This all out movement process slowly turns into a particular religious process. When the children lie down supporting on back or chest during this time, they can move their hands and feet and try to catch hold of different kinds of toys slowly afterwards.

How do the children response after birth?

World Health Organisation in a research report in 1996 stated that the children of 6 (six) months old can sit without any support and stand at the age of 7 (seven)/8 (eight).

They can walk at the age of 9.2 months with a support. Standing properly and walking take more or less 11-12 months. Walking with the change of direction and stopping take place within about 13 to 15 months. The child can kick the ball, throw the ball and can run at the age of about 18 (eighteen) months.

The children can learn how to walk naturally at the age of 2 to 3 years. The children can walk forward and backward. The children acquire the technique of standing, supporting on the tips of feet.

Their eagerness increases in pedalling three-wheeled bi-cycle, going to playground and taking part in various kinds of games.

In which age can the children stand supporting on feet?

3-6 Years of age

In this stage the children can climb up and down the staircase without the support of anybody, have interest in drawing, select the book of its choice from different books etc. The nature of inclination takes place dramatically and rapidly in this stage in comparison to previous one.

3.1.2 Body Growth of Pre-school stage

- In this stage the body growth of the children takes place every year at the average of 2-3 inches in height and about 5 pound growth in weight.
- Gradually the structure of the children becomes thin. The girls become thinner in comparison to the boys.
- Co-ordination is created slowly in regard to the movement in walking and balance.
- In this stage the Primary Teeth fall off and New Teeth begin to grow.
- In the childhood stage the rate of growth expedites.
- The growth of brain takes place quicker in comparison to the other parts of the body in the first few years.
- The nerve cells begin to collect information and send them clearly.

- The growth of two sides of brain takes place in different rates.
- Within 3-6 years of age after the growth of the left side of the brain, it stops dramatically.
- Till the middle of the childhood the right side of the brain begins to work.

How does the brain grow in the childhood?

- The importance of work about 10% because of the difference between two hands becomes clear within one year.
- Within five years the difference between two hands in the field of work becomes completely clear.

● Stage of age	1 year	2 years	3 years	4 years	5 years	6 years	7 years
Boys Height, Centi-metre	72.5	87.5	96.2	103.4	108.7	118.9	123.3
Girls	72.5	86.6	95.7	103.2	107.1	117.3	122.7
Boys Weight, Kg.	8.5	12.6	14.6	15.5	18.4	22.1	24.5
Girls	7.5	12.3	14.4	16.4	18.4	21.4	24.1

Growth and materials influencing Development

Heredity and Hormone : The physical structure of the children depends much on the physical structure of their parents. Hormone secreted from the pituitary gland helps in the building of physique.

- Growth Hormone (GH) helps in the development of various muscles of the body. The Growth Hormone of the dwarf children causes less secretion.

- Thyroid Stimulating Hormone (TSH) secretes Thyroxin that helps in the increase of Nerve cells and also in physical growth.

What problem will arise if there is less secretion of Thyroid Stimulating Hormone (TSH)?

Emotional Development

Children are forced to spend anxious moments at home owing to various reasons. As they suffer from respiratory troubles, so they suffer from internal physical ailments because of cares and anxieties. Again they are hurt undesirably.

Sleep Habits and Problems

- Sleep helps the child to grow. During sleep the Growth Hormone (GH) secretion becomes much.
- To dream at night is a natural event of the child, as a result sleeping becomes disturbed.
- Absence of sound sleep is the symptom of illness.
- Ill feeling and quarrel among the elders in the family disturbs the sleep of the child.
- The child should go to bed at the scheduled time everyday.
- The child requires sleep from ten to twelve hours everyday.

Nutrition in the childhood

- No forecast can be made about hunger.
- The children should be provided with known and common food.
- If required, high protein-food may be provided to the children.
- Social environment helps to choose food.

- The natural growth of the child in the childhood hampers because of emotional moments, mental pressure of the parents, poverty, insufficiency of iron, calcium, vitamin C and vitamin A in food.

Infectious diseases and Malnutrition

- Illness in childhood of the child brought up in care and of the child brought up ordinarily does not stand in the way of physical development.
- Many children in the prosperous states do not take the assistance of Immunization.
- Main cause of the disease is malnutrition.
- As a result of wrong conception about vaccination the rate preventive measures become inadequate.

How does nutrition help in physical development?

3.1.3 Psychomotor Development & Learning

The foundation of this Development Process is to co-ordinate the various parts and limbs of the child's body. This development is made to occur with the co-ordination of the child learner's body muscles activity and nervous cells. The learning process of the learner through this Development process is

- Direct movement Development.
 - (a) Seeing (running bus/train)
 - (b) Bodily observation (Standing erect, exercise etc.)
 - (c) Touching (Inference by touching, speaking and learning)
 - (d) Co-ordinating (Receiving, giving etc.)
- Motorized Development owing physical fitness : running, walking, dancing, acting, mum acting etc.
- **Skilful movement** : Games and sports, imitating works, drawing, recitation etc.

- **Various imitating works :** Holding pencils, wearing shirts, walking, reading, reciting poems, speaking, operating instruments etc.
- In order to apply these Psychomotor Development appropriately in the Primary Stage, proper education system is absolutely necessary. The child is to be given assistance in physical, mental, social and emotional development and we are to proceed towards the development process in accordance with right and just rules.

3.2 Social Development

Man is a social animal. At the time of birth we can call the child neither social nor unsocial. From its very birth the child is regarded as a living self. The chief characteristic of this human child is its long childhood and during this period the child is to depend on others to satisfy its all kinds of demands. So although at the primary stage of the child's life its role remains quite passive, its passive attitude dispels within a short time. Slowly the child responses (reacts) to the different aspects of environment. The manifestation (development) of the child's life takes place bodily and mentally-(physically and psychologically). The social development of the child begins through the proper overcoming of the reactions of the society in which the child is born.

3.2.1 Development and characteristics

In the ordinary sense, the process of overcoming (possessing) the social customs by the child is called the Social Development. In the modern age many psychologists have mentioned some characteristics of an individual by practising the process of an individual's social development.

1. At the time of birth no social characteristic is observed in a human child.
2. A few days after birth the child's Psychological and emotional development process starts.
3. The social development of the child depends on the other sides of life development, that is, the social development of the child depends on the child's physical, psychological and emotional development.
4. At the time of the beginning of the social development the child can respond (react) to very ordinary (common) and easy social affairs.

5. The child's effort to adjust (accommodate) is at the root of social development. Everyone wants to adjust (accommodate) with the environment. This endeavour of adjustment causes the start of Social Development.
6. The Psychologists think that the Social Development of the child occurs only in the social environment or in any environment like the society.
7. The conscious willingness of the child is at the root of the social environment. At the primary stage, social development takes place through some socialization and imitation.
8. There is some difference of opinion regarding the period when the process of Social Development ends in individual life. Some opine that Social Development becomes complete in the adolescent period. Again some hold the view that social development continues upto thirty years of age. Of course, it is true that the social development does not go on all the life.

How does the Social Development take place in a child?

9. As a result of Social Development, an individual acquires the ability to perform social reactions (responses) and his change of social reactions (responses) takes place in the highest stage of development. As a result of Social Development, the change in social reactions (responses) is called socialization.

3.2.2 Social Development in Childhood

In individual life social development takes place in various stages.

- After one month from birth the children become conscious of other men close to them and observe what the elders do, but they cannot do what means by social responses.
- At the age of two months as a result of separation of emotional responses, the child begins to respond to the elders. The child responds to the elders with a smile. The child can recognize its mother. The child responds joyfully to its mother. In fact, the child's social development starts from this stage.
- At the age of three months the children can realize the presence of the elders other than their mothers. The child stops crying if any person comes near it and begins to cry if the person leaves.

How does a child of two months respond?

- At the age of five or six months the children begin to differentiate in the reactions of the elders. The children can understand who chides and who fondles and they respond accordingly. At this time they make a zone (area) among their known persons. They can understand who are known and who are unknown (stranger).
- At the age of eight and nine the children's tendency for imitation is noticed, even they imitate some gestures and movement of limbs. In this way they begin to respond (react) to much more meaningful social reactions through imitation.
- At about one year's of age, the children can understand the directions of the elders and refrain from doing what the elders forbid to do. Again as a contradictory (opposite) reaction, negative attitude is created among them.
- Upto the age of one and half or two years of age the children like the company of the grown ups. They themselves play or they play with their mothers. They do not like to play with the same agers.
- After the age of two years their social reactions completely change. They try to mix with same agers in place of the grown ups. Of course, in the beginning the children cannot adjust much with the co-agers. They want to keep all in their own possession. Consequently, quarrel ensues. The feeling of self-pride awakens in the children centering their own things. This feeling of self-pride is the symptom of social development.
- At about three years of age, this attitude of the children fades away much and then they can mix with other co-agers for a long time.

3.2.3 Social Development in Early life

After infancy the children performs comparatively matured social behaviour when they step into the childhood. Within three to five years the children become the social beings. The children begin to give up their anger out of frustration and illtempered attitude. They begin to create the mentality of co-operation and sympathy in place of biting someone out of anger.

- During this time it is seen that the children spend a longer part of time in playing fantasy. Now they begin to play unitedly in place of playing side by side 'parallel games'. By and by they give up fantasy games and instead they want to play trust-worthy games. During this time they like to build something. They begin to think of a sight in a larger context. They like to act in the role of others. As they are eager to go to the grocer's shop, so they like to go to post-office. That means they like trust-worthy roles now.
- The children always try to do the works which the elders around them do. As a result of doing all these works, they can acquire the various important social qualities, i.e., co-operation, to pay attention to some subject etc.
- Fantasy games inspire the children according to their genders. In this age the children think themselves to be super heroes and want to act in that role. The women encourage the women in various appropriate works. In this regard the girls imitate their mothers. If there is no culture of suitable works for the men and women, the children collect the item of work from books, Televisions, other families or from friends. So there is nothing to be surprised that the little children want to play with their friends setting aside their dolls.
- The children from three to four years of age first go to school. This is the first time that the child appears in a big child society. During this time the child wants to divide its toys. The child carries on clear talk with its friends. The child co-operates with other children. This time the children like to play in groups. Of course, they abide by all the rules and regulations associated with these games. In this way the development of obedience to rules and regulations (discipline) takes place in them. This obedience to law (discipline) is a very useful social quality. The tendency to abide by rules and regulations helps the child's socialization. During this time the children expect co-operation, fellow feeling etc. from the elders. The schools should create congenial environment suitable for the increase of these social qualities. The children who have not yet gone to school should be given the opportunity to mix with the school going children in the play ground, music class, gymnastic fields etc.

Social development in the all round development of a child is a very important part. In this regard the role of parents is very important.

- The child should be given the opportunity of having the company of its friends and elders.

- The easy relation of the parents with the child helps the healthy social development.
- Love for the child and to look after the needs of the child make a good relation between the child and the parents and consequent on this he can lead a safe, self reliant and healthy social life in the society.
- The development of language in a child takes place in the childhood. Social development helps in the child's language development. So the child is to mix with its environment.
- During this time friendship plays an important role in the social development in the child's life.
- In the childhood the children play with the friends of same gender and accept anyone of the friends as the Best Friend.
- Friendship, attention, and recognition are regarded very important and the children do not like to play with their parents. They play alone or play with other friends.
- It is absolutely necessary for the children to come in contact with the elders for the Social Development at this age. Efficiency in Social Development faces challenge at this age, because the child is to compromise first at this age and to share its favourite thing with others.
- At this age the children mix with their friends much more than before, speak with them, play with them, although all those games are not constructive most of the time.
- There is neither definite purpose nor definite objective in their games many a time, but if any elder person organizes the game, they play abiding by rules and become busy to show their excellence.
- By and by a few out of many turn into friends. During this age sense of humour is noticed, they enjoy through making humours and funs.
- The quicker the children get the opportunity to learn, the quicker their Social Development occur.
- Children learn to work unitedly, want to compromise and share everything and again express fellow feeling for their friends.
- Friendship grows through plays, again social development quickens (expedites) through the imaginative and unreal plays with the friends.

- They become aware of the different roles of the boys and girls in the society and their different behaviour. they become conscious of the different physical structure of boys and girls.

We should build the Social Development of the children through comprehensive and positive discipline for acceptable to the society.

How the children become social? Write two causes.

3.3 Cognitive Development

After birth the development of the human child takes place. This development is a continuous process. After the birth of the child and with the rise of its age, its physical, psychological, social, emotional, moral etc. development occur. The well balanced and comprehensive development of every side is needed to be the owner of complete individual self. In the modern age many psychologists have expressed in a word the different parts of psychological development to be Cognitive Development or Knowledgeable Development. Regarding this Cognitive Development of the child celebrated Psychologist Jean Piaget gives out the theory which has attracted all the psychologists. So in going to discuss about the Cognitive Development of the child, the theory of Piaget is to be mentioned.

The word 'Pranga' literally means 'Deep knowledge' The mental process of which man acquires knowledge of everything around him and applies it is called 'Pranga' or 'Deep knowledge'. With the increase of child's age the art of acquiring deep knowledge is changed.

According to the opinion of Piaget our knowledge is stored in an organised way and this organisation continuously changes. In order to understand the process by which the organising change takes place, it is necessary to know its some used up fundamental conceptions.

Explain the word, 'Deep knowledge'.

First conception is scheme. Bartlett (1932) first used this word in psychology. It means the lowest unit or organisation of collected information about some subject. As a result of the addition of new information the continuous change or expansion of this lowest organisation occurs. As for example at the time of birth the child possesses some instincts and reaction process like sucking, reaching, looking, grasping etc. From then the child becomes the owner of knowledgeable organisation while practising those works. In this way the lowest psychological organisation about some subject builds up in the child. Piaget calls this lowest psychological organisation formed in the child about anything Schema.

What is called Schema?

The principal foundation of Piaget relating to Cognitive Development is Adaptation. With the rise of age the child tries to adapt successfully with the various stages of environment. Consequently the child's behavioural and cognitive constructive change takes place. Piaget opines that two fundamental processes assist in this adaption. First process is Assimilation and the second process is Accommodation. Out of these the process of Assimilation mainly occurs in the known environment, where as the process of Accommodation is the process of acquiring new behaviour. That is, the new experiences which the person accept are called Accommodation. Before teaching a new principle the teacher gives a problem to solve for which this principle is needed. The students feel the urge to know the principle which is Adaptation. then the teacher explains the principle in various ways but the students learn the principal idea which is Assimilation. After a long research the renowned psychologist of Switzerland Jean Piaget gives the full explanation of Deep knowledgeable Development divided in five stages. These stages are (i) Sensory-motor thinking stage, (2) Pre-conceptual stage, (3) Stage of Intuitive Thought, (4) Stage of Practical Activity and (5) Period of Formal Preparation. It means the cognitive Development of a child gets perfection through these five stages.

3.3.1 (1) Stage of Sensory-motor thinking

Piaget has named the stage of Development from birth to two years of age as the Stage of Sensory-motor thinking. At the birth moment the child has some sense organs with which the feeling of Environment excitement is created. In addition to it there remain some ordinary type of Motor Action. The child try to direct its power of thinking only depending

on these two types of processes and try to earn experience. As for example, Sucking is a child's natural process of Motor Action. But with a little growth of the child's age from 4 months to 12 months, the child takes a thing in its mouth to taste its quality. That is, the child takes the things into its mouth, which is its attempt for Adaptation and process of earning experience. Sensation of sound is a natural experience of the child. But utilising this sensation the child makes the extension of its power of thinking. As for example, at the sound of the opening of the door, the child expects its mother. All these types of experiences are fully child's own. At this age the child's thinking is never influenced by the language or by the thinking of the grown ups. The child can create and store in mind the reflections of the reactions created in the Stage of Sensory-motor thinking.

The opinion of Piaget in the field of Child Education is that the children must be given to use the things of different sizes and colour. These things are helpful to become expert in the use of the different parts of human body and sense organs. The children create a conception about their environment through reaching near the thing, touching it, feeling etc. The arrangement of play things of circular or cubical size, hard or soft, static or dynamic should be done in order to co-ordinate the power to know the unknown. In this regard, what is attractive to the children should be given priority. The Primary Deep Knowledge Development occurs through plays with these things, which takes important role in their future life.

How does the child expand its power of thinking by utilizing Sensory motor thinking?

3.3.2 (2) Pre-Conceptual Stage

The Second Stage of Development in a child's life beings with the replicas of the above stated some Sensory-motor thinking stage. Piaget has named this stage as the Pre-conceptual stage. The children between two and four years of age can understand the individual and the world to be separate. Thinking of the children's limitation of capability and knowledge, four subjects as the characteristics of Pre-Conceptual stage have achieved recognition. They are :

- Realism
- Animism

- Artificialism
- Transductive Reasoning.

Realism : To accept the material world separately is Realism. In Psychological process the outer and the inner world are accepted separately. In the opinion of Piaget the children make a mistake primarily by taking the outer world and the inner world to be one. By and by this mis-conception is removed. Jealousy for the new born younger decreases by and by and the reality of the younger is recognized and then accepted.

Animism : Generally the children think alike (animate) a large part of things which seem to be inanimate. This is called Animism. In collision of the children's own thinking with the thinking of others in the society, gradually Animism is removed. Piaget has marked four stages of Animism. They are :

- Almost all things are animate (lively) and conscious.
- Only things capable of moving are animate.
- Only things spontaneously capable of moving are animate.
- Consciousness is only limited to the living (animate) world.

Artificialism : The conception that all things are created by man in the world, is called Artificialism. Gradually the self-centric attitude (mentality) of the child ends and objective conception is included in Deep knowledge organisation. As for example, the children think that the moon is created from the cloud and the cloud is created from the distant high rise house. This type of thinking means half normal thinking, half artificial conception etc. By and by the children realise that man has no role in the creation of the moon. Realism and Artificialism are the examples of Pre-Conceptual stage efficiency of thinking and Limitation.

Transductive Reasoning : The thinking in which Deductive Reasoning and Inductive Reasoning are not applied properly and the conclusion is inferred partly unreasonably, has been called Transductive Reasoning by Piaget.

The teachers will have to initiate regularly for the various use of the different things by the learners of Pre-Primary and Primary stage. Attention to be paid to the availability of the children's opportunity to earn direct experience.

Delayed Imitation : The children are able to imitate the behaviour of the animals seen in the zoo after a few days.

Symbolized Acting : The children get pleasure by thinking themselves to be what they are not in reality.

Drawing : The reflection of the children's thinking is seen in the pictures drawn by them. At this age they may be encouraged in the conversation about the pictures drawn by them.

Psychological Hindrance : In this stage though the children are able to express anything or any event, they are unable to change or infer (imagine) in thinking.

Language : In this stage, in case of the children language works as the medium of thinking.

How do the children use different things in Pre-Primary Stage?

3.3.3 (3) Stage of intuitive thought :

The child's next stage of Cognitive Development is called Stage of Intuitive thought. The Stage is extended from 4 years to 8 years. In this stage the characteristics of Pre-Conceptual stage is totally changed. The objective of this change is to give firm footing to the concept and to make them objective and extensive. That means, in this stage the disadvantages of the thoughts of the children in Pre-conceptual stage are removed and the objective thoughts begin to develop.

- At this stage the child can utilize properly the linguistic directions.
- During this time the children's Mental Representation and activities are much more pliable and changing.
- The children of this age can form primary conception about some important matters. As for example, some place may be filled up or vacant. Any object may take place. There is gap between two things.
- The children of this age may re-organise the mental imaginations of their own experiences. As a result, they can build up some concept of their own.

How is the foundation of concept strengthened?

3.3.4 (4) Practical Activity Stage

The basic difference between child's Pre-Activity Stage and Real Activity Stage is the capability of wise thought. The children between eight and eleven years of age earn the efficiency in thinking by overcoming the limitation of Pre-Activity stage. Piaget calls it active thought which we call reasonable thought in the language of psychology. This kind of reasonable thought or active thought builds up centering some fundamental concepts. That is, when the children can co-ordinate among the fundamental concepts, thoughts based on reason or, Active thoughts start. In this stage, the characteristics of child's thought is found only in real stage or in the context of experience. The child cannot extend his thoughts beyond the given information. Of course, during this time some concepts are created in the child and can confine those concepts to some relations. The basic concepts of this stage are as follows :

- **Class :** The children can include different objects in a class on the basis of special characteristics.
- **Relation :** As the children can include in a class on the basis of similarity at the time of classification, so they can include them in a class on the basis of dissimilarity. They can realise the social relation among different persons.
- **Number of Concept :** During this period the children can form scientific concept about number. As a result, it is possible to give the children the various concepts of Mathematics reasonably. The children can follow the commonness in the variety of an apple, a house, a child, a dog etc.

The child becomes ready to be promoted to the formal Activity Stage through the acquisition of preservation, serial determination, classification and number concept. The child's power of attention, remembrance, reasonable thought are developed. Though these concepts are built up in this stage, the power of abstract thinking in the child does not develop.

3.3.5 (5) Period of Regulated Formal Operation

The last stage of Cognitive Development is called the period of Formal Operation. This stage is extended from 11 years to 15 years of age or beyond this stage. During this time the thought of the child is not restricted by real experience or personal observation. The child acquires the power of abstract thought.

- During this time the child can direct its own power of thought freely according to the nature of circumstances.
- The child earns the power of abstract thought.
- During this time the child can direct its own power of thinking freely in accordance with the nature of circumstances.
- During this period the thinking process flows in many ways on the basis of various Hypotheses.
- Cognitive Development gets perfection in the child's life at this stage.
- At this stage the child comes to separate conclusions by activating the thinking process differently on the basis of same Hypothesis and information.

In going to build up this theory relating to the Cognitive Development Piaget has depended on the experience acquired by observing various circumstances and information acquired by experiment. The significance of the theory of Piaget is that the process of acquiring experience in the first stage of the child is mainly self centred and it is not influenced by the thoughts of the grown ups and the teachers. The experience which the children acquire from birth to seven or eight years of age, is its own experience. Attempt of teaching full of reasons should better be avoided upto the self-knowledge stage of the child. Reaching the stage of activity that is at the age of eight the child can form the concept centering real experience. So it is desirable that the education at this stage should always be concrete objects centric. At last after eleven years of age, that is, at the period of Formal Operation, the child should be given the opportunity of learning reasonable subjects.

What sort of teaching should be given to the child and when for its Cognitive Development?

3.4 Emotional Development

Man is a thoughtful animal, but this cannot be believed that man's all kinds of behaviour are controlled by his high standard of reasoning and intelligence. Man's some kinds of behaviour are determined by reasonable social standard and by some mental conditions. Generally the behaviour determined by mental (psychological) conditions (states) is called emotional behaviour.

3.4.1 What is Emotion?

Emotion is the primary stage of human mind. One kind of intimate situation in our mind is created at the presence of something. This mental condition is called Feeling. Feeling has no behaviour related outward expression. Feelings are very soft mental state. Feeling good and feeling bad etc. take a violent form in the context of situation and their outward expression takes place in the behaviour of man. In this circumstance these feelings are called Emotions.

3.4.2 The Characteristics of Emotion

Stimulus is needed for the creation of any kind of emotion. this stimulus may be of any incident of this material world or it may be the concept of a person about an object or it may be of any experience in the past.

- There remains a definite relation between stimulus and emotion among the low class animals, but in case of man there remains no this kind of permanent relation. Though there is the necessity of stimulus for the creation of emotion, in case of man different kinds of emotion may be created in the context of same stimulus.
- There is a close relation of physical activity with emotion. With every emotional stage more or less some physical change takes place. Such as, if a man becomes angry, he speaks loudly and moves his hands and feet.
- Emotional stage lasts long. The sharpness of mental condition rises up by and by and is removed slowly.
- The emotional behaviour is changeable. Little children make a complete use of their bodies to express their joy, but the elders make slight movement of their bodies to express merriment.

- Emotion is specially controlled (restrained) by man's demand, attitude and desire.
- Many a time emotion is created because of man's physical condition.
- Many a time emotion spoils the mental equilibrium (balance).

Write two characteristics of Emotion.

3.4.3 Responses of Emotion

Till two years after birth the emotion of the child is generally determined by its base need and Instinct. That is, the things or stimuli which are associated with the child's inborn base demands or instincts, may create emotion in it. In the birth stage, the relation between stimulus and emotion is pre-destined. But with the rise of the child's age its experience also goes up. A co-ordination with the objective experiences may also occur. In the life of the child emotional stimuli may also change.

With the rise of age the primary Emotional Responses of the child begin to spread (expand). Psychologist, Bridge says—Through the separation of primary feelings other emotional responses are created slowly. At the time of birth the child contains in it two kinds of feeling which are Delight and Distress.

- Consequent on the experience from the feeling of Delight the emotions like laugh, love etc. grow slowly.
- The emotions like anger, jealousy, annoyance etc. are created from the feeling of distress.
- The manners which the child showed at the time of being angry are avoided in the grown up life. The total change is called Emotional Development. As a result of this Emotional Development the manners which achieved permanency in the individual life, remain as the materials of character, because this emotional tendencies control the behaviour of man later on.

3.4.4 Expression of Emotion

When a child reaches the Pre-Primary stage, it then learns the words relating to various mental conditions like happiness, sorrow, excitement etc. After this the child acquire

knowledge about various complex mental conditions by and by, like jealousy, pride, fault etc. This time the child should be made to understand which ideas (thoughts) are good and how these concepts will be expressed outside.

A Pre-Schooler can control its emotion adequately because it then learn how to remove (overcome) disappointment. A child of Pre-Primary Stage is much more active in some subject than the child who just begins to learn how to walk. As the Pre-Primary children are conscious of their own thoughts and imaginations, they learn to understand that their thoughts and imaginations are different from the the child that just begins to walk. As the children imitate others, they learn much more than the persons of nearest relation to them.

Emotion is seen in large quantity among the boys and girls of the Pre-Primary Stage. In the right time when those children attain youth, they express their anger and frustration physically and orally.

How do the child of Pre-Primary stage acquire Primary Emotional Development?

A guardian's most important work is to spend time with a child to understand it. As a result of spending time with the other, both the two can understand each other well and the disappointment between them diminishes. This mainly happens when the child attains the age higher than three years, because at this age of 3+, a sense of good and evil is created in it.

If a guardian feels very tired and frustrated, he should not speak much with the child, because the child may become a prey to the pressure of the guardian and the child may be assaulted without any cause. The children imitate these and in the child behaves similarly in later time.

Before allotting time to the child, the guardian should think how much his behaviour will influence the child. The child should be let know why the guardian gives it time and the guardian should help the child in its various works.

The guardian should help the child in the removal of the child's tiredness and annoyance. He should give importance to the child's thoughts and demands like which room the child likes, on which chair it will sit, which pillow is to its liking, which music the child likes to

hear, or which play is favourite to it. Of course spending time does not mean sitting before the T.V. or computer. Spending time means to do something with which the mental condition of the child will be in the control of the child.

Spending time means not to do anything like keeping the child in the closed room or to detain the child in one corner of the room alone causing it frightened. Many children get much frightened in a lonely state and never want to spend time in this way.

There are some children who like to spend time sitting by the side of their parents. In this case, the parents must not get angry. The child is to be convinced that the parents are also happy in spending time with the child.

What should be done to remove the tiredness of the child?

3.4.5 Fear and Anxiety

After three years of age many children come out of the fear of the past. Any way, they gain new experience, learn how to think and acquire new concepts. As a result, the new sense of fear grows in them. The children of this stage get scared to go to school at the starting stage. They also get afraid of staying at the new house and flying in an aeroplane.

- The children of the Pre-Primary children are seen to express some power of imagination in them—such as the fear of giants, ghosts, imaginary animal or fear of fire or fear of kidnapping.
- If the child thinks that it may fall down in the toilet, it should be understood this thing does not occur. If the child is convinced with the right reasoning, its fear will be removed.
- The Pre-Schooler may be encouraged to express to its cause of fear to you. The child should be made to know that some one may get afraid of anything at anytime owing to some cause.

How you will help the child in removing fear the child?

3.4.7 Emotional Development

- A child of three or four has also its own individual self. The power of judgement of difference between good and evil is created in the child and day by day the child's personality begins to develop. The child can tell more clearly its thoughts. The child's mental condition changes with the time. It is inferred seeing the child where the child is angry or in sorrowful state.
- A child of three years can now learn how to understand all. If there is a case of laughter, the child bursts into laughter but if the child is hurt, it cries out.
- At this stage the child cannot keep control over its thoughts and imaginations. If the child feels anything, it behaves likewise.
- The child of three and four like to beat, bite or push etc. in order to solve any problem. Although the child cannot decide correctly what to do and what not to do. Now your child should be made to understand what is right to do, what is wrong and how to solve any problem.
- When the child grows up slowly, it understands what is happening as a result of its expression of mental emotions and how the remaining persons are reacting (responding).
- The children of four years of age become slowly laughing humorist. The children become expert in creating laughing humour and are also able to give amusement to others.
- After five years the child's power of thinking expedites in the context of work. At this time the child is able to make others understand more clearly its anger, grievance, fear, annoyance etc.

What do the children of three or four years of age do to solve the problems.

3.5 Role of Parents

When the child of six or sixteen causes rowdism, the gravity of the parents is of no avail.

If the child creates chaos and disturbances for a new model of Video games in a toy-shop, home work in Arithmetics or for food in a restaurant, the parents have two options. At first, being very angry the parents may chide the child which will worsen the situation of being calm and quick, they may control the situation just as we see in the T.V. serials.

What is the mystery behind their success?

In the opinion of Jen Barmen, a psychologist, parents have to acquire ten ideal tactics to teach their children how to acquire good manners, otherwise their children will be obstinate and illtempered.

If the children seeing any toy in the T.V. requests their parents to purchase it for them, and if you all at once run to the shop to purchase it to satisfy the child, the child will create an idea in it that anything will be available on demand. But if you say that the toy is very nice and the child should amass (collect) money so that it may buy the toy. At this the child will learn to amass (collect) money, fulfil the aim and the relation between parents and children will improve.

Many a time, parents want to bribe the sons and daughters for their own interest or to perform any work. At this the boys and girls avail themselves of the opportunity of demanding anything after their choice and from this they become autocrat taking the advantage of the weakness of the parents. Instead, if the parents fix a certain amount and say that whatever the children will demand out of that amount, they will buy it for them. In this case, from the very childhood, the children will form the conception of preparing a budget.

If the child determines to go elsewhere and forgets to take the permission of the parents, and if the parents prevent the child from doing any work, the child will shout and cry. The more the parents restrain the child, the more the child will insist on doing the work. But if the parents convince the child why the child is prevented from doing so, the child will certainly realize it and at this the child power of consideration will increase.

If a father forbids his son to any work, the son may request his mother to give permission, and if the mother responds positively, the son will get indulgence and by creating difference of opinion between father and mother, the son will perform the desired work. If the parents take the unanimous decision, the son will not dare do the something.

If the son unnecessarily cries to have something, father should bring him to book. The son should be convinced that his unjust demand for anything will never be complied with.

If the son does not show proper respect to father, the former should be persuaded to understand what is right and what is wrong. If the son does not adhere to the father's advice, it should be clearly stated that father does not at all like son's this sort of discourteous behaviour.

What sort of good qualities should the parents possess?

If the parents with the children go for dinner or lunch outside, and the children begin to quarrel at the dining table, instead of punishing them, before entering the restaurant, the parents should tell the children that if they behave gently, the parents would reward them and then the children will promptly obey the parents.

If the children do not like to get up from bed in the morning, and if they insist on viewing television, the parents should clearly tell them that if they get ready for school quickly, they will be allowed to view the television for a while.

If the children do not want to do any house hold work, and if they put off (set aside) the work on the plea of doing it later on, the parents should warn them by saying that unless they complete the house hold work, they will not be served dinner.

3.5.1 Some bounden duties of Parents

- (i) What the parents want to tell their children directly, should be told clearly (unhesitatingly).
- (ii) The parents should stick to their objectives. The parents must not deviate from their objectives how much their children insist on anything.
- (iii) The parents should be calm and quiet and should have sound sleep. They should keep their heads cool. The parents would be able to cope with the problems.

3.5.2 Pre-Primary social firmness

Pre-Primary or Pre-School social efficiency (skill) depends on three things—self-control (restrain), Verbal conversation and sympathy (compassion).

Many parents and educationists think that the children should spend much of the time with the groups (teams) so that they may acquire Pre-school social skills properly, but this concept is wrong. Sometimes, they became so much fatigued by the teachers of that school that it is not at all possible to learn proper behaviour with their help.

3.5.3 How to acquire the Pre-Primary skills

Emotion : Emotion is one of the weapons to acquire this skill. In the way the child learns to speak of his mind's word. If the parents speak out their mind's words, the child will also open its mind to them. The child should be understood which circumstances the parents like and which circumstances the parents dislike.

Build up the relation intimate love with the child :

If the relation between the parents and the children becomes good, the child will be able to mix well with the rest of the society. There will be no problem in accommodating with the new society.

Which of the three qualities are required for building up Pre-school skills?

Keep the Home environment Property

Please carry on positive talks at home always. The more you talk about your frustration to your child, the more your child will become fatigued. Make your mentality to solve problems.

If there occurs any problem among your child and its friends in the nursery school or among its Aunties, please encourage your child to solve the problem.

When your child will be in sorrowful state, please try to keep cool

When your child will be depressed or in sorrowful condition, do not be excited but speak with him gently and try to keep its mind peaceful. The child will learn this gentle behaviour and behave with its friends likewise.

Do not loose temper at your child's misbehaviour

If your child becomes angry at any thing, let it understand that the child is wrong instead of pressurising it.

Try to be an ideal man to your child

Your behaviour in presence of your child or in its absence will be such as the child may imitate you.

Keep off evil company

If your child mixes with the evil company, there lies the possibility of the child's misbehaviour.

Teach your child how to abide by discipline

Please create the habit of obeying some rules, regulations and discipline in your child so that with the increase of self-control, the child's behaviour will be good and the child will be popular with others.

What will you do to make your child's behaviour good?

You also take part in the games with your child

If you some some times play with your child, the child will feel more comfortable. Don't forget at the time of play that you are not its friend, you are its guardian. Do not be angry and use any word causing excitement. Play with the child in a cheerful mood.

Please select a T.V. programme that will inform the child of its behaviour in the pre-school period.

Allow your child to see such programme, as will help it to learn good behaviour. The child should not be permitted to watch the quarrel making programmes. It is difficult for the child to share anything with others.

The children usually do not want to share their own things with others. Teach the child to share anything with others. The thing may be food or any play thing.

How will you behave with your children?

3.5.4 Role of Pre-Primary Workers

The Pre-school Staff (employees) generally look after the children below 5 (five) years of age. they generally work in the Anganwari or Nursery of Non-Government School or in any Child Centre where the parents both service holders keep this children. These employees play on important role in building the character of these children. They have contribution not only in building their character of the children but also in every sphere of the children's physical, mental and social sides.

These employees spend most of the day time with the children. If necessary, they discuss with the parents about their children's behaviour and regularly keep contact with the parents of the children. Sometimes they take part in administrative work.

Most of the employees perform the task of giving primary education to the children along with taking case of them.

The children of this age mainly receive education through plays. In this way they acquire many things of Science and Arithmetic through games and sports.

As a result of living with many friends together, the children learn to achieve some social qualities. They learn to make many more new friends through conversations among themselves. Above all, the most important thing is that they learn to mix with all.

There employees arrange some developmental functions of various types for the children.

There functions are such as are joyful and beneficial to the children.

The identity of a child is reflected through its behaviour. So the incapacabilities in a child, may these be physical, mental or social, will have to be removed so that the child may carry on its studies rightly by setting aside all these in future. Above all, the child is to be an ideal man.

What qualities should be there in an ideal child?

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3.5.5 The duties of the teachers

- The teachers should come to school regularly.
- They should follow the scheduled curriculum for the uplift of the children.
- The Pre-school environment should be suitable and beautiful for the growth of the children.
- It is necessary to keep regular contact with the parents. If necessary, the suggestion from the parents regarding their children should be taken or suggestion should be given to them regarding their children.
- The children should be learnt the tactics how to solve the problems by facing them.

Which qualities should a Pre-Primary teacher require?

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The task of teaching to the children of the Pre-school is risky as well as satisfactory also. These types of teachers take the important role in the building of healthy and successful citizens in future. An ideal teacher is honoured by all. Above all, the parents want to give responsibility of their children on those who will be able to make the character of their children successfully.

A Pre-school teacher discharges an important in a child's life because he helps the children not only in studies but also in all respects so that they may solve all problems fearlessly in future.

Teachers generally try to teach the children through the indoor games which can be played in the four walls of the room so that the skills in different subjects may grow in them at an early age.

Regular interactions (conversations) among the parents and these teachers are very essential. In this way both parties can be informed of the growth and development of the children. Above all, it is the duty of the teachers to inform the parents of the development of their children. Most of Pre-schools prepare their curriculum in such a way that when the children will go to school, these teachings may be of much use.

The Pre-school experience in case of a child depends much on the teacher's personal qualities. Though the efficiency of a Pre-school teacher varies in respect of a country or a state, the most important thing is the method of teaching the child in a joyful way and this experience remains memorable not in the life of the learner but also in the mind of the teacher.

How should be the Pre-school curriculum?

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3.6 SUMMARY

From the very birth the physical, psychological and emotional development beings slowly. Almost upto three years of age the physical development of the child takes place rapidly. the physical structure of the child depends much on the physical structure of the parents and the ascestors. Nutrition, the home environment, emotion, sleep etc. spread influences on the growth of the children. After the birth of the child, its social development begins through the responses of the various parts of environment. The Social Development of the child gets firmness coming in contact with the elders. The Cognitive Development of the child in a word is called Intellectual (Knowledgeable) Development. The psychological organisation about something builds up in the child's mind by and by. The knowledgeable Development becomes complete in some layers like the onion. Generally the behaviour determined by psychological (mental) condition is called emotional behaviour. There lie two kinds of feeling in a child at the time of its birth. With the rise of age, the child gives up some emotions while some new emotions grow in the child. This total change is called emotional development. The role of parents in all round development of a child is very important. It is the duty of the parents to know the psychology of the child.

3.7 Exercise

1. Very short answer based questions :
 - (a) Where in India is the research on 'The stream of children development' going one?
 - (b) What is the full form of WHO?
 - (c) On which does the Physical Structure of the child mainly depend?
 - (d) What is the principal cause of the child's social development?
 - (e) How does a two-year child make social response?
 - (f) What is the meaning of 'Knowledge'?
 - (g) Who is Jean Piaget?
 - (h) What do you mean Real Activity Stage?
 - (i) What does Psychologist Bridge say?
 - (j) How does a five-year old child make emotional responses?
2. Short answer based questions :
 - (a) Discuss the different stages of Physical Development.
 - (b) What caution is to be taken about nutrition in the childhood?
 - (c) What is Psycho-Motor development?
 - (d) What are the characteristics of the Social Development?
 - (e) Discuss in brief the role of parents in the Social Development of the child.
 - (f) What do you mean by Pre-conceptual stage in Cognitive Development?
 - (g) What is emotion?
 - (h) What do you mean by the emotional responses of the child?
 - (i) What is the cause of fear and anxiety in a child?
3. Essay type questions :
 - (a) Discuss how does the Physical Development of a child take place?

- (b) What is the responsibility of the parents in Social Development of the child?
- (c) Please mention the theory of Piaget in Cognitive Development of a child.
- (d) Discuss how the Emotional Development takes place.
- (e) Discuss the role of the parents in the all round development of the child.

3.8 Books

1. Siksha Manobidya—Subhil Roy.
2. Pre-Primary in Child Education (Sishu Sikshay Prak Prathamik)—Dr. Chaitanya Mondal.
3. Sikhaner Manastatwa—Pranab Kr. Chakraborty & nrisinha Kumar Bhattacharya.
4. Swasthya O Sasir Siksha—Subhil Gharami & Sankar Kumar Dutta.

Unit 4 □ Individual Inequality/Individual Difference/ Motivation and Creativity

Structure

- 4.1 Introduction**
- 4.2 Objective**
- 4.3 Individual Inequality Difference**
 - 4.3.1 What is Individual Inequality?**
 - 4.3.2 Classification of Individual Inequality**
 - 4.3.3 Nature of Individual inequality**
 - 4.3.4 Different sides of Individual inequality**
- 4.4 Educational Inequality Difference**
 - 4.4.1 Causes of Individual inequality**
 - 4.4.2 Educational significance of Individual inequality**
- 4.5 Motivation**
 - 4.5.1 Concept of Motivation**
 - 4.5.2 Importance of Motivation**
 - 4.5.3 Techniques of the creation of Motivation**
- 4.6 Creativity**
 - 4.6.1 Concept of Creativity**
 - 4.6.2 Characteristics of Creativity**
 - 4.6.3 Techniques of Creativity Development**
- 4.7 Summary**
- 4.8 Exercise**
- 4.9 Answer hint**

4.1 Introduction

Individual difference is a main characteristic of life-energy (life-force). The teacher performs the task of the determination of Individual Inequality or Individual Difference in the field of education and the important works like the awakening of motivation in the learners and developing creativity in them etc., because education is a continuous living process. We will discuss how the learners maintain individual difference in them in their physical, mental, social, cultural, emotional and educational aspects. Besides this, awakening of motivation in the learners keeping Individual difference intact and the development of creativity are the objectives of the teacher. We will also discuss here how this objective becomes successful and useful to the real life of the learners. We will be able to know, understand and write as follows :

- The physical, mental, social and emotional development of the child.
- The difference in the development process of the child.
- How and how much this process comes.
- In spite of physical, mental, emotional and social difference, the teacher will try for the development in the Individual Life of the learner.
- The principal objective of the modern child centric education is the Individual Development of the learner. The selection of curriculum, teaching method, co-curricular activities etc. are necessary to make this objective successful.
- Creation of the tactics to arouse motivation in the learner.
- Development of creativity and Development of Inventive power in the learner.
- Such a policy (tactics) is to be found out as the development of creativity talent takes place in a child in spite of the child's individual difference in it.

4.2 Objectives

There will be individual inequality or individual difference in the child, but in spite of it our objective is to awaken motivation in the child and try to make the child as the owner of a mind full of creativity. Through this we will come to know and understand the following :

- Each and everyman is different from each other in respect of Physical, Psychological, social, emotional, cultural etc. aspects.
- Individual inequality can be ascertained according to these differences.
- It can be known that this inequality or difference takes place because of birth side, that is, because of the difference and inequality of heritage and environment.
- Educational and vocational directions can be given according to this difference.
- Consequently, the development of all the possibilities in a child will be possible.
- The Education system can be possible through the motivation creating state.
- There will be the arrangement of the development of creativity power in the learner.
- The development of the latent (dormant) aptitudes in a child can be done.

4.3 Individual Inequality Difference

The most important and worth mentioning theory out of the theories invented as a result of the extensive researches of Modern Psychology in the recent time is that there are a great deal of individual difference between man and man from various sides. These differences are of different kinds.

4.3.1 What is Individual inequality?

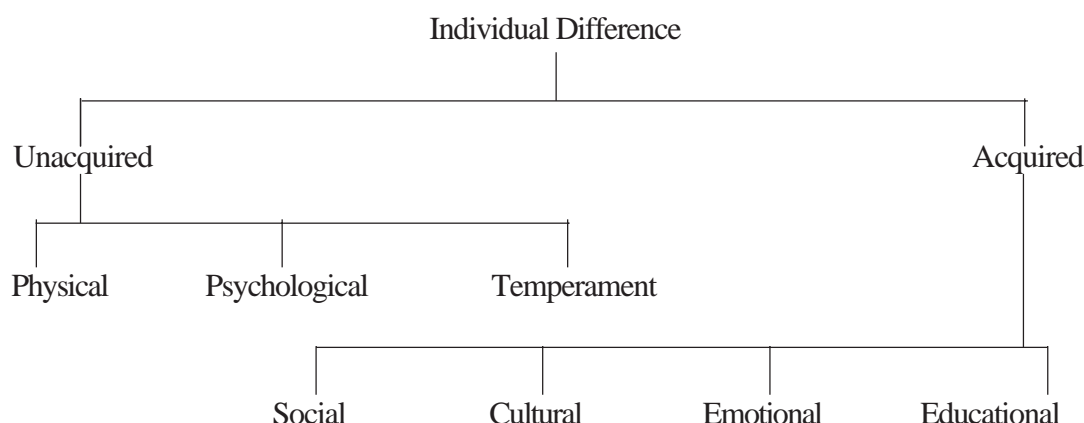
Individual inequality or Individual difference is a primary characteristics of life force. Every man lives with his own personal trait. Every animal possesses (owns) its own individuality combined with its inborn and acquired various characteristics. This is called Individual Inequality or Individual Difference. This Individual difference or difference between man and man is called the theory of Individual Inequality in Psychology.

The psychological, social, physical and Emotional Development of the children of a certain age takes place in the same way. The stage of the Development in life has been divided on this basis. Seeing the similarity of the process of Human life Development, it has been divided in a few stages. But this does not mean that there is no dissimilarity in the various stages in the development of human life. Though there is similarity at any stage in development between man and man, there are many differences. This very difference is man's individual indifference or individuality. So the Psychologist, Alport says, the methods

of exercises by the Psychologists are as many as there human beings in the world, because everyman accommodates with nature according to his own style. In going to accommodate with nature, man has exposed his own nature the exercise which will enable us to realise its real significance.

4.3.2 Classification of Individual Inequality

Difference between man and man comes from different sides. This difference occurs from Physical, Psychological, social characteristics. That means, some become to talk, some short, some thin, some intelligent, some less intelligent, some very compassionate, again some cruel. The qualitative difference between man and man has been classified in two classes.



Difference is noticed in the inborn qualities and characteristics acquired by man. Difference from this sort of characteristics is called unacquired characteristics difference. there may also be difference in the characteristics and qualities which man acquired by experience. This type of difference is called the acquired qualitative characteristic difference.

Unacquired characteristics are divided into three parts—Physical difference, Psychological difference and temperamental difference. Acquired characteristics are also divided into four parts—social, cultural, emotional and educational differences. The difference between man and man takes place in all these ways. No quality (trait) of man can be called fully unacquired or fully acquired. the acquired quality (trait) also changes under the influence of environment. On the other side the acquired quality is also many a time influenced by the unacquired characteristics. Psychologist Gates makes the differential characteristics a straight line classification such as : (1) Physical structure difference, (2)

Mental (Psychological) structure difference, (3) Innate aptitude difference, (4) Acquired skill difference, (5) Emotional difference, (6) Will-power difference, (7) Moral difference.

4.3.3 Nature of Individual inequality

With the progress of Measurement Method in Psychology it has been possible to measure all kinds of characteristics in man. After measuring various Psychological characteristics the Psychologists has determined the differences of characteristics between man and man. This difference may be of two kinds—Qualitative difference and Quantitative difference.

Man can keep any kind of characteristic in his individual life from his own qualitative side and again he can also do so from his quantitative side. Sometimes, some of man's special characteristics cannot be measured correctly. In that case his qualitative side is to be relied on. If we measure some special characteristic of many men, we will see that it obeys natural division, that is, most of the persons under measurement stay with in a particular limitation. They are called natural characteristic persons. The rest of the persons are the owner of the characteristics above the normal. They are called highly characteristic persons. Those who are much below the normal are called low characteristic persons.

4.3.4 Different sides of Individual inequality

We will discuss in brief the different sides of Individual inequality/difference. We will discuss how man keeps individuality among themselves in respect of physical, psychological, temperamental, social, cultural, emotional and educational sides.

Physical Difference : Everyman has two hands, two feet, two ears etc. which are almost alike, still there is separate existence from the physical structure. As for example, from the weight side difference is noticed among the students reading in the same class. Again from the rate of weight development there is difference from man to man.

The difference in the height of the learners reading in the same class is also noticed. Some one is ordinarily tall in height where as some one is dwarf. Separate existence is kept in human life at the rate of height development.

Over and above the weight and height of the body, variance is found in the different limbs and parts in respect of measurement from man to man. Some one's hands are long, some one's flat, some one's hands are short, some one's nose is sharp, some one's legs

are long etc. Anthropologists consider the measurement of all these bodily limbs and parts for the classification of man. They determine the non-resemblance of man according to the measurement of human skull.

The difference between man and man in respect of Physical strength is also noticed. Some one's strength of hands is powerful than others. Some one is physically stronger than some other person. The power measurement machine is available to measure the power (strength) of the various parts of the body. Individual difference is there in respect of this power (strength).

The individual difference in respect of working power relating to the physical power (strength) is also noticed. Every man has his own working ability (power). All cannot perform equal physical work. Some one can easily lift the thing of 10 kilograms weight but some other person cannot lift the thing weighing 5 (five) kilograms. Some one can walk five kilometers at a stretch, whereas some other person becomes tired and exhausted after walking a little distance. Individual difference is also noticed in this respect also.

Individual difference is visible not only from the physical measurement but also from the co-ordination of physical movement. The physical patience (calmness) depends on the co-ordination of physical movement. The difference in man is visible in respect of this patience. How much a delicate work a person can perform depends on the calmness of the particular limb.

Besides this, the difference in the appearance between man and man is also noticed. The various separated physical characteristics unitedly give rise to an attitude of difference in a person. As a result of the assimilation of all the physical characteristics, the complete appearance of a person is manifested. Complexion, voice, gestures and all these give rise to such a characteristic of his own as help us to recognize him.

Mental difference : Difference between man and man is noticed in respect of Psychological side.

in respect of observation ('*Pratyakshan*') process difference is observed from person to person (individual to individual). At the time of observation ('*Pratyakshan*') some one acquires single knowledge. Some one acquires objective knowledge. It means, by observing that the thing exists as it is, their observation is correct. They are of realistic nature. Some one acquires knowledge by mixing his own personal experience at the time of observation. They are of individual (personal) nature. So individual difference lies there from observation end.

Another psychological process associated with observation i.e., image creates difference from man to man. This image is created centering various sense organs. According to the difference of this image man has been classified into different classes like, seeing, hearing, touching etc. groups.

Another aspect of condition with observation i.e., from the very reaction (response) also individual difference/inequality is also marked. The difference of time between the application of stimulus and exciting response is called Response (Reaction). The time of response may be of various kinds. When we make the response of only one stimulus, the time required is called simple response. When we select one of many stimuli to respond, the time required is called complex response. The individual difference is caused because of this response time.

Individual difference is also noticed from Remembrance Process side. From the different aspects of Remembrance Process like learning, preservation, recurrence or repetition of experiences etc. difference from man to man is also seen. It means someone may learn very rapidly, while some other cannot learn easily. Some one may retain the learnt subject while some other cannot. Again some one may remember the learnt subject quickly while some other cannot do so. Again some one's power of recurrence is very strong while some other has no such power. So from the point of view of the power of remembrance, there is difference between man and man.

Difference from man to man is also seen in respect of the formation of concept. Concept is the complete knowledge about an object. Individual difference is also seen relating to the skill of forming concept under some special circumstances. Some learner may take up general knowledge from the various parts of the reading syllabus very easily, but many learners cannot do so. So from this end, individual difference is also seen.

Very much difference is noticed in respect of the learner's interest. This interest controls much any work of man. We see some one has interest in literature, some one has interest in Mathematics. Again, it is seen that there is the difference in interest among the teacher, the medical practitioners, the law-years etc.

Individual difference is also seen in respect of Imagination Process. Someone possesses much of creative imagination, some one makes only acceptable imaginations. Some one has the power of making scientific imaginations. The historic imagination in some one is found in excess. So individual difference is found from this end.

The skill on which individual difference depends is Psychological power which we generally call intelligence. The variance of intelligence is noticed among the students of the same class. It means some one is highly intelligent, some one is imbecile, some one is very weak in intelligence. As a result some one learns some subject very quickly, some one learns very slowly and some can not learn at all. So, individual difference is noticed.

Special Power : Difference from individual to individual in skilfulness in special work. Again from the point of view of Attention (Concentration) individual difference is also visible. Some one listens to the teaching subject with undivided attention and so he learns very easily, where as some one becomes inattentive and learns nothing.

Difference in Personality or Temperamental Difference

Personality of a person means his all sorts of physical and psychological traits. There lies the hint of individuality (Separate existence) in personality. Difference between man and man in respect of the characteristics in personality or temperamental characteristics is also noticed. According to difference in personality man can be divided into three parts, namely, self centric, Individual Centric and in both ways.

Social Difference :

Human child is born in social environment. After very birth the society influences its ways of behaviour. Consequently, various types of behaviour in the personal life are controlled by all the rules of the society. As the child leads its life in the social environment, its life style is built up accordingly. After birth the child lives in a family. It is the family that controls the behaviour of the child prior to the school life.

The child is specially influenced by the behaviour, life style, ideals, attitude etc. of the elders in the family. So the family influence brings on difference in the child. The behaviour, life style, ideals, attitude etc. are of different nature in the children of the different families. Though the children may have similarity in physical development in two families, there is social behavioural difference in them as they come from two separate families. After this the children come to school. The influence of the school is seen in their behaviour. There is difference between the students of the same age coming from the rural areas and those from the urban areas. The social development takes places from two sides—some owing to the impact of the teachers and some because of the influence of the classmates. So during this time the difference in the behaviour of the children depends on the school

society. After this the work-environment and the greatest social environment turn up. In the adult age, the Social Difference in man is restricted by these two environments. The difference in the human work culture, retired life style and attitude toward social functions are controlled by his own social involvement. As the values of individual life are controlled by the society, the difference in values from the individual side is seen.

Cultural Difference :

Just as Individual Difference is noticed because of Social Environment Difference, so special natural environment creates Cultural Difference in man. The cultural life is built up according to the variety of the natural environment of the different countries. The dress, food habits etc. of the man of the tropical countries are different from those of the cold countries. Of course, this sort of natural environment influences the social life. Every society stores some basic materials on the basis of its own experiences. This is called culture. This basic material differs because of the division of clans and castes.

In the modern age, even in the International age, man avails himself of the opportunity of exchanging relations between each other overcoming the national and local barriers. In spite of this the influence of the nation is revealed in the behaviour of man and it manifests the difference from Individual to individual.

Emotional Difference :

Individual Difference is also noticed in respect of the Emotional reactions. In the grown up age remarkable difference is noticed in the emotional reactions (responses) of two persons. Somebody begins to cry over a trifle, while somebody never cries in deep sorrow. Some one gets angry for nothing. Where as some one does not get angry easily. As a result of socialization of the emotional responses takes place, the difference from individual to individual is also noticed. Being angry some one is about to hit other, while some one restricts his behaviour to arguments. Someone may get pleasure centering something, where as some one may be angry or sorry.

4.4 Educational Inequality Difference

It is better to call Efficiency Difference in the school than to call this difference as Educational Differences because in the wider sense education includes all kinds of acquired

behaviours. In this sense, all the social, emotional and cultural differences are educational. Here educational difference means the difference of how much efficiency the learner has acquired in respect of various school curriculum. We see from the common experience that some learners can acquire some subject very rapidly while some other learners fail to acquire the same easily. Again many learners learn much of the some syllabus under the direction of the some teacher where as some others cannot do so. Difference in education occurs owing to the absence of equality in opportunity in many a case. But in spite of having opportunity for earning education, the standard of education in case of all cannot be equal. The individual habitual difference exists even in the midst of equal opportunities. Difference in attitude takes place because of educational difference. Again, difference in feelings of the different persons occurs owing to educational difference.

4.4.1 Causes of Individual inequality

There is the difference of opinion among the philosophers, thinkers and psychologists from the very ancient time regarding the cause of Individual indifference or Individual separate existence. This difference in opinion is created specially centering the heredity and environment. In the opinion of some body the environment in which the learner resides determines this difference. Of course, this problem is not so acute. It has been proved from various experiments that very few characteristics of man depend completely on heredity. The Psychologists think that unacquired characteristics are controlled by the heredity of man and the acquired characteristics are under the control of the environment. Social and cultural characteristics are fully controlled by the environment. So it is not possible to choose one cause in culturing the habits of man. It is necessary to culture the influence of these two processes for complete culture of man.

4.4.2 Educational significance of Individual inequality

Individual Difference or Individual Inequality is an important subject of Psychology. The Psychologists and the educationists have come to the conclusion that everyman lives with his own separate existence. In order to exercise (cultivate) this separate existence of man difference based Psychology has been created. The objective of this branch of Psychology is to cultivate the rule of difference or inequality in man. This important information of Psychology naturally influences the Science of Education. the objective of education is to help the manifestation of all round development in individual life. If the cultivation of the learner's own skill or characteristic is not done, no plan will be framed

for its development. When the learners first come to school, he possesses the acquired and unacquired characteristics in him. The acquired characteristics are influenced by the environment. If the teacher cannot cultivate these characteristics at the outset, he will fail to impart education to the learner successfully. In order to make the objective of the teacher successful, the curriculum and the teaching method will have to be prepared on the basis of the Individual Difference rule. If it is not done, the real responsibility cannot be discharged.

In the education system of the modern age the multipurpose curriculum has been arranged after recognizing the theory of Individual Inequality (Difference). The objective of the multipurpose curriculum in the school is to give opportunity to every learner for development according to his own interest and capability. As a result, just as the individual life develops, so the task of education becomes easy. In the past only ordinary some subjects were included in the curriculum. But at present it is not done so, because it was thought in the past that as many as many as learners were in the class, they were all equal mentally; but consequent on the acknowledgement (recognition) of this theory of Individual Difference, this conception has been changed.

In the modern teaching training method the application of the theory of Individual Difference is found. The application of this theory in all modern methods is found. As for example in the Dalton Project unlimited liberty is given to the learners for the perfect unfoldment of individuality (individual separate existence). The system of individual centric teaching method is based on the theory of Individual Difference.

In the modern education system, special importance has been laid on the co-curricular activities. The learners get the opportunity to unfold their psychological characteristics through these co-curricular activities. The learners also get the scope to unfold their own characteristics through the co-curricular activities like games and sports, music, recitation, literary activities etc. As a result education becomes joyful to them.

According to the modern system of education the responsibility of the school is not limited to the Cognitive Development of the individual of the learner only. It is also the responsibility of the teacher to guide them to the path of life rightly. So it is the responsibility of the teacher to give proper educational and vocational guidance to the learner in the field of education. the cultivation of Individual separate existence or Individuality is absolutely necessary to give educational and vocational direction (guidance). The perfect manifestation of Cognitive life will not be possible, unless the individual is given assistance in the

preference of educational subject according to his own calibre and separate existence. On the other side, if the individual is not assisted in the selection of his profession in consistence with his individuality, he will not get satisfaction in his professional life. The importance of Individuality has been enhanced because of so much importance has been stressed on the directions given in modern education.

Just as the necessity of retirement in human life has been increased with the development of Mechanical Civilization, so the scope of retirement has also been increased. In order to get rid of the monotony of compulsory work arrangement of retirement has been provided. Proper education is required how this retirement will be enjoyed. It is the responsibility of the school in the modern age to teach how the retired life will be led. The theory of Individual Difference is to be accepted as the basis of this education. The school is to try that the learners may acquire proficiency in the self-interest centric work from the tender age and get joy through it in the retired life.

We should bear it in mind in applying the theory of Individual Difference in the field of education that just as good result is the outcome of the application of this theory in the field of education, so the individual characteristics can be unfolded (developed) with ideal education. The development of Individuality is the ideal of education.

Check Your Progress :

Write the answer of each of the questions in the given space below as per rubric.

1. What is the objective of this unit?

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2. Fill in the blanks :

(a) Individual Difference is of two kinds _____ and _____ .

(b) The difference from individual to individual characteristics may be from two ends _____ and _____ .

(c) The development of individuality is _____ .

3. In how many parts man can be divided according to Individual difference and what are they?

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.....
.....

4. What is the cause of Individuality (Individual separate existence)?

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.....
.....

4.5 Motivation

The word ‘Motivation’ has been derived from the Latin word ‘Mavers’. It means—to move. Motivation is the tendency to perform the objective moving behaviour. Every work necessitates an internal power or enterprise. This internal power is called motivation. When an animal being inspired by an objective becomes active to fulfil it, this condition is called Motivation.

4.5.1 Concept of Motivation

The modern educationists hold the view that the learners must be motivated to move towards learning at any cost. The behaviour of the learners is to be controlled, in order to teach them the lessons of civic life and the tendency of their behaviour is to be determined. In order to determine the movement of behaviour, the use of motivation is necessary.

The endeavour of a person is required to do any work or to learn anything. The source of endeavour is demand. The creation of demand is made from the feeling of want. The feeling of want creates such a psychological condition as is called hankering. As a result of hankering a special energy is created in man. With this energy work or learning can be moved towards the fulfilment of the definite objective. As a result, the behaviour is performed and the person or the animal feels satisfied. This full process is called motivation process.

Motivation is not a permanent arrangement. There remains no motivation after attaining the desired objective. In many cases if failure repeats again and again to reach at the desired objective, motivation diminishes or exists no more.

So motivation has a role behind all behaviours of man. It is motivation that gives a well definite objective to any work. It is motivation which creates interest in us to lead in the desired path. Again, inspite of having interest if feeling for the work is very low, motivation can only make the feeling or interest for the work stronger.

Various psychological factors work behind motivation. When we feel the want of anything, demand for it is created in us. In order to satisfy this demand, we perform behaviour. The feeling of want is gone and we come back to the state of equality.

The characteristics of motivation are as follows :

- (1) Motivation does not perform behaviour, but motivates to behave.
- (2) Being inspired by an objective, motivation engages one to work and keeps this spirit till the last.
- (3) Centering inborn demand motivation helps to acquire new demand.
- (4) Motivation gives a clear and complete conception about objective.
- (5) As the endeavour of the complete shape of the work is presented at first, motivation helps to understand the real nature.
- (6) Motivation creates energy and speed.
- (7) Motivation helps in the selection of suitable work to react at the objective and tries to give up others.
- (8) Motivation makes behaviour well disciplined and well directed.

4.5.2 The Importance of Motivation

Motivation supplies inspiration and energy in work. Inspiration and energy are necessary in the performance of every behaviour. The task of motivation is to awaken the latent enterprise in man and create an environment suitable to behaviour.

It is necessary to create this enterprise in the learner in the field of education. In case of the want of natural motivation in the field of education, the assistance of the inaugurators like praise, prize, punishment etc. is sought. These inaugurators assist much in the learning

process. Although many a time motivation is created in the learners with the help of the external inaugurators, this external inaugurator turns into internal inaugurator. Of course, external inaugurator cannot create any permanent enterprise in the learner. If the learning subjects are made meaningful and attractive, these can create permanent motivation acting as the inaugurators.

The work of motivation is to select and control the tendency of our behaviour. Motivation determines when we will respond to the work and when we will not respond to it. Motivation also determines how we should respond in the different circumstances. So when a particular motivation is created, not only we become active under the pressure of internal exciting situations but also the works which we do, become specially selected and controlled. The principal cause of this selection and control is motivation.

So, when a teacher will assign a lesson to the learners, it should be specified, otherwise the learner will pay attention to the different parts of the lesson for the difference in motivation and as a result the real objective of education will be in vain.

One of the notable work of motivation is to direct the behaviour of man in a definite way. In order to reach the specific objective only performance of the behaviour will not serve the purpose. The behaviour is to be moved forward in such a way that the individual may fulfil the desired aim and his motivation also may be satisfied.

This information has much importance in the field of education. In many cases the learner cannot understand the relation of the real objective with the learning subject and as such the learner finds no interest in learning. In this case the teacher is to clearly explain the objective of the learner with the learning subject. If the learner has the clear and complete idea about the objective, the effort of the learner will be suitable to the objective and will not waste time by making unnecessary behaviour. Now the duty of the teacher is to enable the learner to choose from the different behaviours the most effective behaviour and give the learner clear direction about it. It is noticed that the appropriate motivation determines the tendency of behaviour in the learner, i.e., makes the learner move towards objective. So motivation has occupied an important place in the learning process.

4.5.3 Techniques of the creation of Motivation

As a teacher our initial duty will be to awaken the motivation worthy of teaching among the learners. The techniques noted below may be accepted for the learners.

Reward : The teacher may use the motivation among the learners through appropriate rewards. We see in the various teaching related examinations that in every case energy given stimulation make the learning process effective. So in directing the primary stage of learning process the teacher will take the assistance of reward to awaken motivation in the learner. The reward may be of indicative (suggestive) or concrete thing. Whether the reward is given through abstract or concrete thing the teacher should keep a vigil that the internal motivation may awaken from it by and by, because if the motivation is not automatic, teaching also will not be dynamic. So inspite of the teacher's endeavour for concrete object related reward to create motivation in teaching, he will arrange for abstract reward in its place in the proper time by and by in order to make the motivation self functioning (automatic).

Assessment : In the field of learning in the school, the assessment of learners' progress provides motivation in the learning endeavour (effort). Generally we make the comparative study of the educational achievement of the learners with the same process as we make the assessment of the learners. In this method some of the learners achieve high standard, as a result they acquire some good habits helpful to learning. But all these habits cannot uphold any permanent impression in the minds of the learners. The learners who get bad assessment, have no scope to awaken motivation. So the modern Psychologists opine that the system of assessment is also to be changed in order to awaken motivation in the learners. That is, every learner may be assessed according to his own demand and capability. If that arrangement is done, everyone will be interested in objective related work. Psychologist Rothni says, if the assessment technique of the school gives full honour to the individual difference of every learner and judges the learners individually in the light of their own demand and capacities, the motivation of learning in each of them in this system will be awakened.

Success : Success in a particular work motivates a person to the similar work. If the satisfaction of the demand of success is not done, the learners will give up the both types of particular and complete objectives in the process of learning.

Praise : With the development of the language in the child, we may use praise as reward. Praise works as linguistic reward to the learner. As a result, motivation is created in them. Of course, without the use of language, reward is also given in various suggestive (indicative) methods. Psychologist Harloc has concluded through various experiments and observations that praise assists in the learners, self-respect demand contentment. He also comes to the conclusion in this respect, which is specially significant to the teachers. He

says that the inaugurative value of praise depends specially on the personality of the teacher.

Co-operation and Competition : The attitude of mutual co-operation and competition among the learners creates motivation in the field of learning. The modern Psychologists, hold the view that the attitude of mutual competition inspires every learner in the field of learning to apply his own individual limited power fully.

The activity power of the learner increases because of team spirit in the mutual co-operative works. So the teacher will apply two types of techniques in order to awaken motivation in the field of learning.

Desire Excellence : In order to awaken motivation in the learners, such a subject is to be selected for them as can satisfy all sorts of demands in them. One of the important demands of the learners in the field of education is—their desire of excellence. The subject of syllabus must be suitable to the desire of efficiency in the learners. Many experiments and observations in regard to the selection of the subject matter have been going on at present. the objective of this type of experiments and observation is to select the subject matter suitable to every learner, which the learners can acquire smoothly in their qualifying stage. If the syllabus (curriculum) appropriate to the contentment of every learner's, biological, psychological and social demand is selected, all problems relating to the motivation of the learners in the school will be possible to solve. So the subject matter (syllabus) is to be selected to awaken the motivation in the learners.

The teacher may adopt various types of techniques more besides the motivation creating techniques. In this content, the teacher should bear it in mind that their main object is not only to make ready socialization but also to rouse permanent motivation. Bearing this in mind the teacher should adopt such arrangements as will create permanent interest in learning among the learners and keep up motivation in the process of learning. The teacher will work in the definite four stages to fulfil this objective.

Firstly, the teacher will create interest in the learners. By giving this sort of encouragement he can create this sort of interest.

Secondly, he will make the learners conscious about their success in order to assist the learners to make proper self-assessment of the learners's present capability. Consciousness about success, assists to create motivation in them.

Thirdly, it is also the duty of the teacher to arrange for appropriate prizes, praises etc.

Fourthly, it is also the duty of the teachers to correct the wrong behaviours of the learners, because motivation cannot exist in any subject of any case instinctively. So in many cases through restriction it became necessary to change direction.

4.6 Creativity

The advancement of man and civilization has been possible owing to the special active power of man which is creativity. Creativity is always bent on finding out a new path, creating something new or making new thought or its expression. As it a discontent is always active, as a result, though man is satisfied for the time being with what is in his possession at present, he engages himself to create something new more.

When a man guided by these delicate feelings and engaged in various works involves in new type of work having recourse to the media of the expression, the eagerness or tenacity to those works is called creativity. It means, after obtaining efficiency in the work through the exercise (practice) of man's own work in social life, and application of that work efficiency again and again is called creativity. It may be the exercise of Mathematics, Art and Craft or Language. In case of teaching the children in the school the teacher may apply his own creativity-method to create new creations.

4.6.1 Concept of Creativity

The effort to know and understand Creativity as Psychological efficiency has been a long drawn process. But though, it is possible to determine the nature and definition of intelligence, it is not easy to determine the nature and definition of Creativity. Its one of the causes is that two types of different kinds of efficiency have been determined only in the middle of the twentieth century. Again though the efficiencies are of two different kinds, the relation between them cannot be ignored. Though the attempt to make researches on Creativity occasionally and separately in the history of mankind, the researches are neither effective nor lasting. Another cause is that the earlier researchers think that creativity is not a universal efficiency (potentiality) like intelligence. Creativity is inborn or good gifted ability (efficiency) which is possessed by a very few persons who are called talented (genius) persons. Later on it has been proved through researches that every person has creativity in him—some one may have much, some one less, some one's creative power is expressed, some one's creativity remains in veil (inexpressed).

Acquisition of creativity needs first of all knowledge in the respective field or clear concept that will help the person concerned in afterwards thought. As far example, in case of drawing pictures, knowledge is required how a thing will be created very easily on the basis of a new method. Smoothness and naturalism from concrete (real) concept to ornamental concept or creation of art by applying this same form are needed. Just as the form of various things can be given from 'zero', so primary draft of a sketch can be made from 'zero'. Again, the sketch of a face can also be made very easily. These types of information are not available from the drawing books. The teacher will make the presentation suitable to the learners attractive by simplifying his subject knowledge. This is Creativity.

The abandoned thing or the art work made of something (object) is included in creative works. It depends on the development of creativity of the teacher what and how he will do with this thing. The more the creativity of a person is neat and clean, the easier, simpler more joyful will be his teaching method.

4.6.2 The characteristic of Creativity

Some characteristics became prominent from the definition and concept of creativity.

Firstly, creativity is an ability (activity power) of man. The persons who have much ability (activity power) in them own some special characteristics in their individuality (personality). These characteristics have differentiated them from the persons having Less Creativity. It means it is possible to identify the persons of creativity by observing the individual characteristics.

Secondly, a special type of psychological process has been well ascertained for creativity. This psychological process becomes effective as soon as the person feels an urge to create. This psychological process is not so active any other time. From this end the way to know about the psychological process of Creativity, is to review the psychological process while the work of creation is going on.

Thirdly, the ultimate fate and success of Creativity lie in the product of creative concept. Consequently, the psychological activity power which can create new concept but cannot express is of no value. It will be possible to assess the personal characteristics of the individual along with the concerned psychological process through the fundamentality and novelty of the created thing.

Fourthly, in the field of Creativity the importance of the country and time is specially remarkable, because the more the extension and permanence of the region in which the creative work or concept brings forth, the greater it is regarded as the creative work. The thing which is considered as fundamental in the regional zone, is certainly much greater creative work if it is recognized in the greater world as a fundamental one. Again that novelty or fundamentality remains accessible for a long time as a much greater creative work (creation).

Creativity is such a psychological efficiency which in combination of some personal characteristics instigates some psychological process to create fundamental concept or thought and exposes it in the befitting environment.

4.6.3 Techniques of the Creativity Development

Even in the field of following the theory of Creativity, that is, the nature of Creativity, there is the special importance of multipurpose thinking. Before discussing that subject we should state what the factors of Creativity are. It means, in case of the necessity of measurement, it should well specified how observation can be done. Although there is difference of opinion among the Psychologists regarding the factors of creativity, mainly four factors or techniques may be mentioned. These are

Ease (freedom from discomfort) : The creative persons are much more comfortable (easier) in the creation of some concept. The measurement of ease is done who can create quickly how much new concepts. On its basis Torrance and many of his later researchers have regarded the measurement of ease inevitable in going to measure creativity. The more a person brings forth concepts within a scheduled time, the more is his ease (comfort).

Flexibility : Besides the numerical side, another condition of Creativity is whether a creative person can roam rapidly from concept to concept. As a result, even a large number of the concepts of the same type are created, their creative value is much less in spite of their ease. Any writer can write a large number of writings of the same type. If a writer writes a few writings and if each of them is full of variety and different from the other, the second person is treated as more creative. This power is called flexibility. Ease and flexibility both control the number of creation and variety. The method of its measurement is that some of the concepts which have been created are separate from their earlier concepts with the help of their numbers.

Elaboration : The creation of a large number and variety of concepts is not enough. If the concepts are not expressed in proper elaboration (details), the justification of creativity exists no more. One of the characteristics of Creativity is help the individual in publishing elaborately all the details by expanding the concepts. The creative singers of the classical music identify their Creativity by expressing the expansion of any tune (raag) in novel ways in their voice. The painter leaves behind his self-achievement in his created paintings. The writers (authors) also cause the expression of their creation likewise in case of description. In a word, the well combination of ease, flexibility and elaboration gives rise to Creativity.

Fundamentality : The fundamental concept is the concept which is never found in the creative work, which no body thought of before, but which is sufficiently meaningful and significant. The power of the creation of the fundamental concept is the life-centre of creativity. Though a concept is created with the combination of the former three techniques or factors, it is not recognized as a creative work unless it is new, novel and fundamental. The more a creative work is regarded novel for a long time or the more it can keep up its fundamentality in an extensive area, the more it is regarded as a noble creation.

Whether there is the necessity of a special type of education in order to assist the perfect development of the latent creativity in the creative students, is a controversy for a long time. It should be borne in mind that there is creativity in more or less all men. But those who have this potentiality is of greater quantity and have a few special characteristics of individuality in them, ultimately get recognition and establishment in the society. That is why so much importance in the specially separate education is given at present. Some of the steps and theories in the field of education which if accepted, may make possible the nurture and development of creativity are mentioned below :

Variety : Variety needs to exist in the subject matter and method of Education, because creative persons may have disinterest in the stereotyped subject. But all about a compulsory material in any subject cannot be omitted. It means all the learners will have to acquire central syllabus (curriculum).

Fore bearance : It is the bounden duty of the teacher to abide by the non-formal or novel answer work method etc., to make necessary correction keeping intact the mainstream of the answers given by the students and to comply with the trend of making novel questions by the students in some cases.

Framing of Knowledge : According to this theory the knowledge of man is of his own. From this theory even man builds his own store of knowledge. So it is the duty of the teacher to encourage every student to enrich his own store house of knowledge and everything like teaching to the students, expectations from the students needs to be recognized. As a result of this the students will be given liberty and they will be inspired to collect new information after their choice. They will be active to create the store of knowledge of their own with the help of the collected information.

Tendency of co-opinion : A tendency in all is found that everybody thinks it right what ordinarily most of the people accept. But the tendency of all to be of same opinion with the most of the people is not equal. The creative persons are generally out of this tendency. Consequently, many a time it is found that they cherish different opinion from others and support their opinion firmly. So they are called the persons of different opinion. It is the duty of the teacher to consider the different (Separate) opinion of the students with proper importance in order to cultivate and nurture creativity and if there is any incompleteness in that opinion or thinking, the teacher should assist the students to complete it.

The Expression of the Creative Works : The ultimate success of Creativity lies in its expression. In most of the schools the students are encouraged in the creative activities like annual exhibitions, magazines, wall magazines etc. But often these activities are celebrated in a stereotyped way to maintain formalities. The original teaching-learning needs to be included in these types of works and through out the year subjects full of variety should be arranged. As a result, there will be opportunity of the expression (manifestation) of creativity side by side with the advancement of teaching and learning, only teaching-learning in the class room is not sufficient, the boundary of the class room needs to be much extended.

Motivation : Befitting Motivation is needed for the Creative Work and its expression. The success of this sort of work increases motivation and helps to preserve it. Again through the research and analysis the causes of the failure of motivation creates new energy and inspiration. The teachers need to be aware of this and try to apply the results of both success and failure in the objective of preserving motivation technically. It is one of the

techniques of the maintenance of Motivation to apply the matter of the intimate relation of three things, Motivation, Activity and Endeavour (Effort) properly.

United Work (Team Work) : Many a time the team responsibility is more effective than the single handed responsibility. If the creators are involved in any project unitedly, naturally they feel much less embarrassed to expose themselves primarily in the small restricted zone of the team. As a result, later on it becomes much easier to him to expose himself in the larger zone. The possibility of disappointment becomes much less owing to failure and team responsibility.

Development of Personality (Individuality) : The question of Individuality Development is remarkably important side by side with Creativity Development, because many a time Creativity can lead a person to disintegration, loneliness, undesirable self-centered attitude etc. So the creative students need to keep a vigil on the social development, power of application, concentration in thought, smooth expression of emotion etc. This work can be well performed in the above noted team responsibility.

What is said about the preservation of creativity is only partial. In this work the responsibility of the teacher and the guardian is equal. It is better to say that through the united effort and co-operation of both the maintenance (preservation) of Creativity is possible.

Check Your Progress :

5. What is demand?

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6. Name two techniques of the Creation of Motivation.

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7. What is Creativity?

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8. How can be the learners made Creative through team work?

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4.7 Summary

Every animal can keep up its own individual difference through out its whole life. It is also the duty of Psychology to frame the rule of this separate existence (difference). This difference may come from the various sides—Physical, Psychological, temperamental, social, emotional, educational and cultural sides. This difference or separate existence is sometimes, in born and sometimes it is acquired by the learner.

Many psychologists have pointed out the cause of this difference as hereditary. Again, some one holds the view that it is not hereditary, environment is the basic cause of the creation of difference. The latest modern conception is that this difference (inequality) is determined as a related action of heredity and environment. The theory of Individual Difference is very important in Education. In the modern Child Centred Education the individual development of the child is the principal objective of education. In order to make this objective successful, the curriculum, training method, co-curricular activities etc. will have to be selected considering the learner's own characteristics and educational and vocational directions will also be given according to individual difference of the learner. Then only all the possibilities in the child will be developed (unfolded) smoothly.

Motivation determines the nature of learning. So if the motivation creating circumstances are enclosed in the field of education, the learning process can be made effective.

4.8 Exercise

1. Answer the following question very briefly. (Not more than 30 words.)
 - (a) What is Individual Difference?
 - (b) What is Motivation?
 - (c) How many materials are there in Creativity and what are they?
2. Answer in brief (Not more than 150 words.)
 - (a) From which angles are the differences in the learners in the class room seen?
 - (b) Write the characteristics of Motivation.
 - (c) What are the characteristics?
3. Answer the following questions properly.
 - (a) Discuss how you will create Motivation in the learners in the class room?
 - (b) Which theory is adopted in the development of Creativity?
 - (c) Discuss the educational significance of Individual Difference.

4.9 Answer Hint

1. Physical, Psychological, social, emotional, cultural difference, to ascertain individual difference, difference may be from heredity and environment. According to this difference educational and vocational guidance may be given. The system of education can be done through the motivation creating situation and creativity in the learner can be developed.
2. (a) Unearned, earned, (b) qualitative difference, quantitative, (c) Ideals of Education.
3. In three parts, Self Centric, Individual Centric and Both Centered.
4. Heredity and Environment as the cause of Individual Difference—completely responsible from two sides.
5. Individual enterprise to do and learn any work. The source of this enterprise is demand.

6. Two techniques of the creation of motivation are reward and assessment.
7. Being guided by delicate feelings man engaged in various works has recourse to the medium of the expression of feeling. When he is envolved in any new work. Then the desire to do such work is called Creativity.
8. The learners do not hesitate to express themselves naturally if they are involved in a project unitedly in a team. Later on it becomes much easy to express oneself in a larger zone (area). The possibility of losing enterprise becomes less for failure because of the team responsibility. As a result the learners become creative.

Unit 5 □ Learning Method

Structure

5.1 Introduction

5.2 Objective

5.3 Definition of Learning

5.3.1 Concept of Learning

5.3.2 Nature of Learning

5.3.3 Difference of Learning

5.4 Theories of Learning

5.4.1 Theory of Relation about Learning

5.4.2 Theory of Addition

5.4.3 Theory of Trial and Error

5.4.4 Principles of Learning

5.4.5 Educational Significance of Thorndilee's Principles of learning

5.5 Conditioning Theories

5.5.1 Classical Conditioning or Pavlovian conditions

5.5.2 Educational importance in Pavlov's conditioning process

5.5.3 Operant's Conditioning Theory

5.5.4 Characteristics of Operant Conditioning

5.5.5 Educational significance of operant Conditioning

5.6 Montessori Learning Theory

5.7 Summary

5.8 Exercise

5.9 Answers Hint

5.1 Introduction

Learning is the important part of the discussing topics of Educational Psychology. Learning process is such a complex process as cannot be explained very easily. In the ordinary meaning we are not habituated to treat Education and Learning separately. Education is a living process on the move. Individual desire and unwillingness, posture and thinking, activities and behaviours, efforts are influenced by the living force of education. The objective of education is to bring about the desired change in the learner's acquired knowledge, skill, efficiency, interest and desire in the educational institution. It is necessary to understand how it is possible to bring about this change. Here this discussion will be made. We will come to know from this discussion :

- The change in the behaviour owing to the influence of experience and training.
- The learning process is organized from the intimate urge.
- Learning assists in the development of Individual life.
- If the theory to determine the nature of learning is known, it can be experimented on requirement.
- It can be known what the child learns of its own after birth.
- Every animal develops within the scheduled time destined by Nature.

5.2 Objectives

The teacher of the child needs to be creative. The teacher must know well about the children in order to assist in their development scientifically after reading their minds successfully. The minds of the children are to be read. It is our objective to build the children worthy of this world by reading their minds.

We will understand through it—

- We will come to know the ability and weakness of the child.
- We will know the change in the behaviour of the child through experience and training.
- Learning helps in the development of individual life but not natural.
- The necessity of learning theory in the determination of the nature of Learning.

- The principles of learning will be made known.
- The utility of Operent Conditioning in the mechanical repititive learning.
- The importance of Montessori Theory in the Learning process will be made known.
- The application of Montessori Theory in child-learning.
- Above all the Montessori Theory will be made known.

5.3 Definition of Learning

The development of individuality depends on heredity and environment. The instinctive attitudes and inborn behaviours bring about new behavioural stream in the changed forms, our previous experiences, training and urge to adjust with the environment force us to behave in a new way. This sort of transforming process is called learning. It means the process of change (transformation) under the influence of previous experience and impact (influence) of training is called learning.

5.3.1 Concept of Learning

The Development of Individuality depends on two forces. One is heredity and the other is environment. The circumstances in on which heredity will be helpful in the development of individuality depend on the activity of environment. Again heredity determines how environment will influence on the individual. We have been struggling all the time with the environment being insisted on earning our livelihood. A particular behaviour in a particular momentn is the outcome of this struggle. The expression of behaviour is one kind of united effort. We have been accommodatng with the changing environment and consequently there has been a change in our inborn aptitudes. The inborn instinets and aptitudes are being transformed and have brought about the new form of attitudes and behaviours. As a result, our past experience, training, urge to accommodate with environment and all these have compelled us to make new behaviours. This sort of behavioural changing process is called learning process. It means the previous experiences and the process of the behavioural change because of the influence of training is called Learning. Megock & Iron have analysed the different definition of Learning and determined the effective definition of learning that Learning one kindof tried behavioural change process in which an individual becomes benefitted with the past experience undoubtedly.

5.3.2 Nature of Learning

Learning is a complex process which cannot be explained with one definition only.

Learning Environment :

Maintaining balance between changing environment and individual life is absolutely necessary for learning. It means, learning is possible if there is urge from the outside world. If the environment stands still, there would be no necessity of new behaviour and there would have been no requirement of learning. So one of the characteristics of learning process is that this learning process starts because of urge from the outside world or environment and inspires the novelty of environment and also encourages the change in the past behaviour.

Learning and Self activity :

When learning becomes absolutely necessary by outside or environmental existence, this process occurs in the individual. This change in self-effort is performed on the basis of past experience and training. So the learning process awakens the self activity of an individual. Learning is an internal process of an individual.

The Demand of Learning and Objective of Education :

If we judge these two characteristics of Learning Process from the point of view of the objective of education, it is to be stated that this urge (insistence) and opportunity are to be created by the learners for the sake of education. The teacher and the learners with their united efforts will set up such an objective and problem as will necessitate various types of accommodations. This feeling of necessity will create an urge in the learners for learning. Various types of changes take place in the modern system of education to meet much of its demand.

Learning and Motivation :

Just as the urge of adjustment makes learning process effective with the outside world, so the urge of inner world provides it energy. Motivation is such a condition in the heart of an individual as motivates an individual to behave in a particular way to reach the objective of a subject. It means it is a sincere condition (stage) of a person to get at the special objective. This sincere stage can be awakened with the objective fulfilling outward external things. As a result it encourages the necessary adjustment for learning. In this way the urge of the external world through making the desire of the internal world active,

has motivated us in the acceptance of new behavioural process and learning has become fruitful.

Learning and Result :

Another side of Learning is that Learning is a Psychological Process. That is, Learning is the process of Development, not the result of Development. In the common sense we use the result in the same meaning with Psychological process. According to the psychologists the process with which we acquire these is Learning. A period of time is required for earning skill or knowledge in any particular subject from the beginning to the end and the process occurs in our inner world within this period is Learning. Again, this may be called as practice (exercise) centered process. Though Learning is one kind of process and it is quite different from its result, the responsibility of the teacher will be to control this process keeping in mind towards that result. This result takes the role of creating motivation as the objective in the primary stage.

The gradual development of Learning Process. The Learning process depends much on practice. When a person faces any problematic situation, he brings change in his traditional behaviour to solve the problems by means of different efforts. That is, his learning or behaviour changes in every stage.

Learning and balance in Individual Life :

Learning always satisfies more or less any demand of a person. That demand may be either of his own or of the society. The change in the behaviour of an individual by learning is progressive. Apparently, some sort of behaviour does not fulfil the demand of the society or seems to be unsocial. If it is analysed, it will be found that this behaviour fulfils the person's same of his own demands.

Learning and Adjustment (Accommodation) :

The nature of Learning will remain incomplete if we cannot determine the difference of Learning from like other processes, particularly, from Adjustment (Accommodation).

In analysing the nature of Learning. Learning is one kind of Development Process. The chief characteristics of this process are : (1) the self-activity of the individual and the possession of that self-activity, (2) inauguration and results of mutual activities with Motivation, (3) Change in the behaviour owing to Learning, (4) Gradual development, (5) Artificial, because it requires training or experience. Learning is not a natural process like Adjustment.

5.3.3 Different Kinds of Learning

Thinking of the behavioural varieties of man and variety of the subject matter of learning, it has been divided into three parts—(1) Skilful Learning, (2) Cognitive Learning, (3) Emotional learning.

Skilful Learning :

Skilful Learning means those processes of change by means of which the activity efficiency (Skill) of the learner increases. It is the combined learning of sense organs and motorized machines. That is, it is mainly the successful combination of one work-sense organ basis activity with another work-sense organ basis activity and it is the learning of the combination of observation and motor machine. That is, it is the learning of the combination of the learner's observation with a work sense organ.

Cognitive Learning :

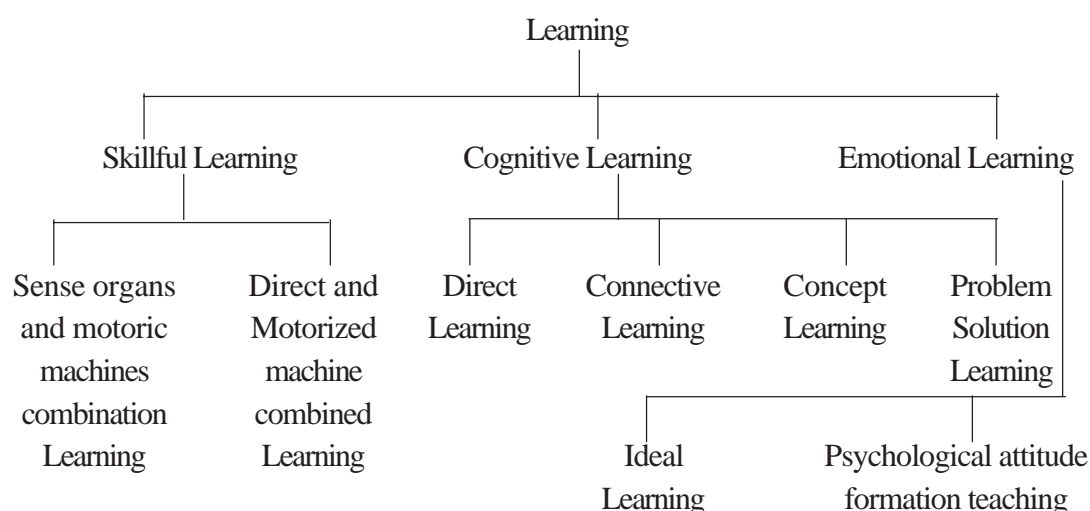
Cognitive Learning means the learning with which the learner earns some experience or, creates a particular concept. Direct—Learning, Combination-Learning, Concept-Learning and Problem solution-Learning are included in this Cognitive-Learning. In the Direct-Learning experience can be acquired with direct contact of the sense organs. In the Combination-Learning experience is acquired with the combination of the present experiences with the experiences acquired in the past. In Concept-Learning, through the analysis of the characteristics of the objects and re-analysis of the same, a little unit of concept is formed. In the Problem-Solution Learning, through the completion of incomplete situations or overcoming any sort of opposition, the skill of adjustment is acquired.

Emotional Learning :

The Emotional Learning means those learnings which cause change or co-ordination of the emotional reactions (responses) of the learner. The learning of Life Philosophy or the process of Psychological attitude is included in this category. Life Philosophy learning means the acquisition of psychological organisation which restricts the behaviour of man completely. Psychological learning means the process of permanency of the Emotional-behavioural tendency.

The learning of man extends from the beginning of the acquisition of the simplest mechanical skill to the formation of the individual perfect life ideal. the process of earning experience in man's life extends from his birth to death. Within this span of life man is forced to change his behavioural style according to the nature of the circumstances and

personal demand for adjustment. In this work, man uses different skills of learning. The Psychologists have made this classification of learning seeing this changed behaviour of the learner in the real (Practical) environment. It is the duty of the teacher to ascertain the objective of teaching and nature of learning situation while going to assist the learners in the school. In the next stage, the teacher will determine what sort of activity is to be created in the gap between these two primary situations. In the last stage, the teacher will adopt the activity helpful skills. This effort of the learner will be the recognition (identity) of the special kind of learning.



Check Your Progress :

Write the answers of each of the questions in the space given below. Compose your answer with the answer given at the end of the unit.

1. What is the objective of reading this unit?

.....

.....

.....

2. Fill in the blanks.

(a) The development of individual self depends on two powers _____ and _____.

(b) Learning has been divided into three categories from the point of variety

(i) _____ (ii) _____ (iii) _____.

(c) Learning is not natural process like _____.

3. What is Learning?

.....
.....
.....

4. What do you understand by the Learning of Psychological attitude?

.....
.....
.....

5.4 Theories of Learning

From the very ancient time the Psychologists and the Philosophers are very active in the determination of Learning Process. Probably none of the Psychologists can determine its nature owing to the complexities of this process. As a result, various opinions in this regard are found. But analysis of the psychological condition (State) of those days are necessary in order to know the nature of learning process rightly. That is, if we face any new situation, the change in behaviour is absolutely necessary these. Then it requires the analysis of the state of our mental condition. Many experiments have been made in this regard. Of course, most of these experiments have been made on the lower animals, because most of the Psychologists hold the view that if the experiment done in the laboratory in a well controlled way on the beasts will be much easier and correct. Different Psychologists making experiments in various ways hold the different views all of which are called the theories of learning. The theories of learning are divided into two categories— (1) Theory of Relation, (2) Theory taken as a whole.

The followers of these two theories both believe in the single existence in man. Though they have no difference in opinion in the fundamental concept, they have sufficient difference in opinion regarding the learning of man.

5.4.1 Theory of Relation about Learning

The problem of Relation attracted the thought of the philosophers from the ancient time. Philosopher Aristotle says that the contemporary or co-existing events, concepts or experiences keep relation with one another. In the Nineteenth century the English Philosophers explained the Psychological process like Memory, observation etc. through the Theory of relation. Psychologists like Hobbs, Luke, Hume, Hartle etc. are with mentioned. But in the later part of the Nineteenth Century the psychologists not only limited the concept of Learning within Relation but also tried to explain Learning within the relation of stimulus and Response. So the Theory of Relation is named as the Relative Theory of the response to stimulus.

This Theory of Relation is divided into two parts, (1) Theory of Addition and (2) Conditioning Theory.

5.4.2 Theory of Addition

Analysing learning period behaviour of the different animals Thordike tried to find out the simplest technique. The learning of the grown up persons becomes complex owing to various reasons. His simplest field of learning is a tie or addition to the response to the stimulus. That is, he opines, the relation between the stimulus and response is education. The relation of a stimulus with its response means whenever the stimulus will come to us, we will make the same response. According to this theory learning is not a hesitating work. To control the behaviour through the establishment of relation between stimulus and response is learning. Man's any kind of constructive experience, behaviour and individuality are all the separate theory of relation between stimulus and response. learning in wider sense influences all aspects of human life. So new stimulus-response relations are created through learning and all these relations are restricted to each well-arranged theory. Thorndike in the analysis of his theory has explained this stimulus-response relation with physiological rule. According to him this relation takes place through nerves. This relation is established as result of the diminishing of sensitive power along the passage of excitement. Thorndike makes experiment on the different animals.

5.4.3 Trial and Error Theory

Thorndike experimented on the cat through the Puzzle Box. The mechanical technique that he used is called Puzzle Box. The Puzzle Box has been designed in such a way that

there is only one gate to come out. The door of the box opens if some time the switch is on or the rope is pulled. In this circumstances, Thorndike thrust hungry cat into the box and kept some food outside the box. In the experimental circumstances, he practised the reactions of the cat to come out. When the cat managed to come out, he then instantly kept the cat inside the box and shut the door like the previous occasion. In the circumstances, Thorndike observed three characteristics of the cat.

- (1) When the cat was first kept in to the box under such circumstances, the cat tried to come out of the box hither and thither, sometimes from the gap between wooden planks of the box, sometimes it tried to jump upward. In this way in haphazard trials the cat pressed on the rope suddenly and the bolt opened. As result, the cat succeeded in coming out for the first time.
- (2) In the repetition of that condition it is found that the wrong trials of the cat slowly becomes minimized or by and by successful trials have been accepted as the part of its permanent behaviour and the wrong trials or behaviours have been left out.
- (3) The more the trials are repeated, the more it is found that the cat takes shorter time to come out of the puzzle box.

In every experiment Thorndike noticed these three characteristics of the animal's behaviour and concluded from his observation that this is principal basis of his future researches on learning. In his opinion, in case of animals, both the processes of the exclusion of the wrong attempts and acceptance of the successful attempts are performed mechanically. The animals accept the assistance of nothing of thinking, reasoning and imitating for learning. They learn to solve the problem directly. In going to solve this, they give up the unnecessary trials or efforts. The learning which is achieved through the acceptance of the right paths by discarding the wrong paths of self trial has been named 'Trial and Error Learning' by Thorndike. This method of Learning is called Trial and Error method. The inner insistence to get food has assisted the cat in learning through Trial and Error Learning.

The main theme of this theory is that the animal learns by correcting the wrong in order to fulfil its objective. Objective or to achieve the result is an important aspect of this theory. So this theory has its much usefulness in the school. The function of the educational institution is to present the problem rightly, but not to find out the solution. The learners will learn by means of self-effort if interest is created among them by presenting the problems

properly. The theory of Thorndike has compelled the teacher to be specially conscious of the two sides of the situations.

Firstly, the teacher must have to know about the capability of the probable reaction in the learners. Secondly, the teacher will have to accept the responsibility of selecting the subject-matter in the light of learner's power of this reaction. As according to this theory, the co-ordination of small stimuli-responses is done through learning, the selected subject matters are to be analysed. Besides this, to attention is to be given to this that students may be able to solve the present problem by means of the past experiences in order to make learning successful.

5.4.4 The Principles of Learning

Thorndike has presented same principles to explain how and why the wrong trials are rejected and the successful trials are accepted. The causes of learning through trials and wrong methods are the principles of learning. Thorndike speaks of eight principles of which three principles are main, namely, (1) Principle of achieving result, (2) Principle of exercise, (3) Principle of Preparation.

- (1) **The Principle of achieving result :** It is also said that learning depends on the result of the work. In Thorndike experiment the cat gets food every time on coming out of the cage. So it tries as best as it can to come out of the cage along an easier way. If the cat had no satisfaction to get, it would accept the reactions (responses) correctly. If the happy and satisfying effect (result) is available through the changed connection between the stimulus and response, then the tie of the relation will be strong. If the disappointing (disgusting) result is obtained, the tie of that relation will be loose. The satisfying or disgusting result partly depends on the trial of the animal. In his opinion, this marginal stage will determine which trial will be accepted.
- (2) **The Principle of Practice :** According to Thorndike result is not the only condition of learning. Learning is to be made stronger. Unless the relation between the stimulus and response which has been established, is not made strong, it will not be effective later on. In going to explain how it will be made stronger Thorndike has presented his second principle which is called the Principle of Practice. This principle has two parts.

In the first part he has said that if all other conditions are kept in order, after making the changeable relation between this stimulus and response and if it is practised

repeatedly, its power of connection (relation) will increase. This part of the principle of practice is called the principle of habit. In the other part if there is no practice after the changeable relation between stimulus and response, the tie of relation become loose by and by. There is no novelty in this principle. This part is called the part of non-practice. This is the repetition of the ancient principle of connection or the principle of habit. If all other conditions of the principle of Thorndike are in order, this very significant. Thorndike wants to remind the achieving the desired result by saying all other conditions are in order. It is understood from this that he pays much more importance on the principle of achieving the result than practice. It means if the result is joyful, the power of stimulus-response bondage can be increased by practice.

- (3) **The Principle of Preparation :** Thorndike has mentioned the necessity of preparation for learning in the Principle of Preparation. The eagerness of an individual is required in order to keep successful relation between stimulus and response. Of course he means only physical preparation. He in his principle has referred to physical preparation. The relation between stimulus and response takes place through nervous system. A person's satisfaction will come if physic spontaneously responses to do any work, otherwise discontent will be created. Importance has also been given to the result in the field of preparation.

Thorndike has mentioned five principles. He has called these indirect principles. Here he has mentioned of the various sides of the characteristics of the ancient learning.

- (4) **Principle of Multipurpose reactions (Responses) :** When a man or any other animal faces a new situation, he or it tries all possible means to solve it. Just before making the right response he wants to solve the problem with all sorts of his acquired or unacquired behaviours. Thorndike has called it the Principle of Response because of the different responses of the animal to the some stimulus. The utility of this principle in the file of education is to give an opportunity to the learner to solve any problem with his own effort. As a result the learner will understand his own mistake and correct it properly. If the learners commit any mistake, they will be interested to behave in a way in the field of education. Modern educationists think that the wrong experiences of the learners have much importance in education, because they help to find out the faultless (correct) solutions.

- (5) **The Principle of Psychological Condition** : In his Principle of Preparation Thorndike has specially mentioned the preparation of Physique. Just as there is the necessity of Physical Preparation for learning so there is the necessity of psychological (Mental) Preparation in learning. In this context the principle which Thorndike has introduced is called the Principle of Psychological (Mental) condition. Psychological (Mental) Preparation is essential for any type of learning. In order to make learning successful in our educational institutions, it is necessary to create proper mental condition among the students. This condition can be created in various ways. The main thing of this is to connect the direct problem of the learners' life with the learning subject. If the learners find out the relation of their day to day life in the learning subject, they will be interested in acquiring knowledge. Besides this, there is the necessity of the work efficiency of the teacher behind the mental condition suitable to education. If the teacher can create delightful and happy atmosphere in the classroom, interest of the learners in education will increase. If the learners get scared of the teacher, mental disorder takes place in their mind and as a result learning does not become possible.
- (6) **Principle of Partial Response (Reaction)** : The main idea of this principle is that animals do not respond or react on the basis of the total conditions or circumstances. They observe the separate parts separately and respond to the particular stimulus. They learn through the wrong efforts. As a result, the waste of energy for learning decreases. All the time the repetition of the total condition is not necessary for the application of acquired knowledge. The learning of any lesson by the learners in a school is not fully done. The learners remain ignorant of the some portion of the lesson. The teacher may repeat that particular part of the subject and help the learners in learning the lesson. Besides this, the practice of the partial method of the long lesson is possible similarity.
- (7) **The Principle of Similarity (Simile)** : Thorndike has referred to another characteristic of the animal's learning which is the Principle of Comparison. If we face any situation to know the response acquired or unacquired to adjust, we try to find out partial similarity with any previous situation and response just as we responded previously. It means, in the similar circumstances we respond in any previously acquired way without much consideration. So in order to make learning easier, it will have to raise before the learners if the new curriculum or problem has any similarity with the

previous syllabus. This will result in the easy solution of the problem. That is we will have to proceed from the known subject matter to the unknown store of knowledge.

- (8) **The Principle of Associated Movement :** Thorndike has mentioned a special type of characteristic relating to the connection of stimulus and response at the time of learning in his Principle of Associated Movement. In his opinion any response naturally connected with any stimulus can be associated with any other stimulus. This process may be called as the Conditioning Theory. the children will be able to apply in their later life the habits, feelings, or other psychological traits (qualities) which they acquire in the school. this is the real significance of this theory. the principal responsibility of the teacher is to create such habits and mental organizations as the learners will be able to apply in their life. As a result the real significance of education will be fulfilled.

5.4.5 Educational Significance of Thorndike's of Principles of learning :

The learning theories of Thorndike as well as the related theories are not totally correct, still they have sufficient importance. If the result of the principle of achieving results is satisfactory, learning becomes possible and permanent. If the result is unsatisfactory, learning does not last long. So in order to make learning long lasting in the school, the syllabus is to be presented to the learners in such a way that both the reading subject and the result may be satisfactory. The joy of success will encourage the learners to learn spontaneously. The teacher has also some responsibilities to create the joy of success. Firstly, if the teacher gets satisfaction in his own work, that is, if he can enjoy pleasure with the company of the learners, the learners can receive education with joy from that teacher.

Secondly, if the reading subjects of the school are intelligible to the students and if the day to day happenings are in consistence with the subject matter, the students will be interested in learning. The teacher will have to keep a vigil on the presentation of the subject.

Thirdly, the learners should be able to get hold of the learning subjects with their Psychological (mental) or physical power. Such a problem should be given to the learners as they themselves can solve them independently or with the little assistance of the teacher. If these problems are beyond their capacity, they will not feel encouraged.

Fourthly, the subject matter is to be presented serially according to difficulty. If the learners have to face the two difficult subject to solve, they will be frustrated and never find satisfaction in the field of education.

Fifthly, if the same subject matter is presented before the learners, their interest will increase.

Sixthly, if the teachers help, praise and encourage the learners of and on in time of teaching, the learner will understand that they are advancing in the right path. As a result, they will take interest in learning, the teacher will never disappoint the learner. The learning will be successful if the least of the success is rewarded.

The chief idea of the Principle (Theory) of Exercise (Practice) is to give perfection to learning by practice. the practice of new behaviours should be done through application (use). The newly acquired knowledge will have to be cultivated through the different circumstances of the life environment. The learning will be fruitful and satisfactory if the teachers create an opportunity how the learner will apply knowledge in their life.

The objective of education is to make the learner useful to life, to make him worthy of solving all problems in life. The learners receive training in life through this sort of applicable practices (exercises).

The main theme of the Theory of Preparation is that learning depends on the eagerness of the acceptance of the subject matter by the learner. Preparation means all sorts of preparation of body and mind. The education which is not useful to the body and mind of the learner will certainly fail. As a teacher our responsibility is to wait for this preparation and move forward slowly. Nothing of the experiences beyond the acceptability power of the child should be burdened forcibly. Without waiting only for the natural unfoldment of the teachers should make arrangement for their preparation.

Natural process is to be depended on for physical development. The teacher may create mental preparation in the class. Before imparting lessons the teacher may introduce the teaching subject and create the mental condition (situation) of the learner. In the proper time he will make the teaching process perfect (complete) by presenting the subject matter.

5.5 Conditioning Theories

The word 'Condition' is used in many senses. We call any sort of habit or acquired mental characteristic as Conditioned reactions (responses). After the Russian Scientist Pavlov different kinds of experiments have been carrying on Conditioning. Conditioning means one kind of process of experiment and the information that is available regarding behaviour, may be called conditioning. As a method Conditioning exercises (practises) the nature of the animal's behaviour in the simplest circumstances. That is, it practises one kind of learning process. Through Conditioning Theory it is tried to explain how the animals learn amidst comparatively controlled (restricted) stimulating circumstances. There are two kinds of explanations regarding conditioning—Pavlov firstly proposes the rule regarding Conditioning which is known as classical Conditioning or Pavlovian Conditions. At present this theory in the changed form has been established in another Conditioning Theory which is called Active Conditioning. A special form of this Active Conditioning is Operant Conditioning.

5.5.1 Classical Conditioning of Pavlovian Conditions

Pavlov in his conditioning process experimented on the secretion of saliva from the mouth of the dog. If any food product is kept before the hungry dog, its natural reaction will be the secretion of saliva. When this secretion of saliva because of the food product comes in contact with the tongue, the sight or smell sensation may occur. The secretion of saliva is the natural reaction (response) of the food product. Pavlov kept the food product before the dog in the laboratory to measure the quantity of the secretion of saliva and determined the measurement of its secretion of saliva. After this everyday he began to ring a bell before giving food to the dog in this experimental situation. It means, he rang the bell for some time after he had brought the dog in this experimental situation. It means, he rang the bell for sometime after he had brought the dog in the laboratory and gave the food before the end of the ringing of the bell. It is found after the repetition of this thing that before giving food to the dog, its secretion of saliva began to take place with the ringing of the bell. On the first occasions with the ringing of the bell before giving food, the dog's secretion of saliva did not take place, the natural vigilant response for the ringing of the bell was found. But as a result of repetition, the concerned natural response to a stimulus is connected with another stimulus and in this situation the dog creates responses by secreting saliva only at the ringing of the bell without food. Pavlov calls this process as Conditioning

Theory. But this training earned response cannot be called Revolving process in the traditional sense, because Revolving process is inborn. At present the Psychologists call this Conditioning Responses. It means secretion of saliva is Conditioning Responses. The stimulus with which this response is naturally associated is called Non-Revolving stimulus. It means food product is one kind of this stimulus. The artificial stimulus with which this conditioning response is being created is called Conditioning stimulus. The natural response connected with this stimulus is called Non-Revolutionary Response, the response through which this full process is being performed, is called Conditioned Response or Conditioning (Pavlovian Conditions).

5.5.2 Educational importance in Pavlov's conditioning process

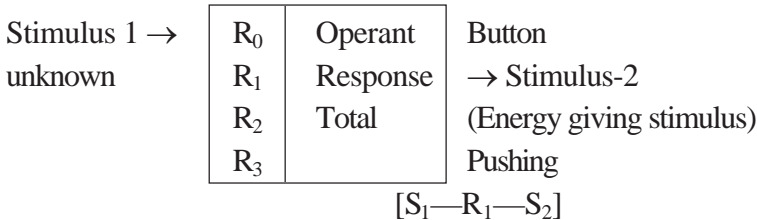
It is possible to explain the learning of man with the help of the response which is created with any stimulus by Conditioning. Pavlov himself has viewed that various types of habits acquired by education, education, sense of discipline and everything are nothing but inseparable conditioned responses. In the modern age the educators think that although it has importance in the field of education, it has implication in the repetitive mechanical education. Such as—the behaviour of the child in the first stage of learning language can be explained with this process and the application of this process is helpful in learning a language. Even if no arrangement of conditioning in a well organized way is done, some sort of learning may be acquired with conditioning. Even conditioning works through the correction of child's mistakes. Besides these, the habitual works like getting up from bed early in the morning, washing hands, feet and face, studying in the first time, taking food in due time etc. are learnt by the children as a result of conditioning.

5.5.3 Operant's Conditioning Theory

Skinner made an experiment by pushing a rat inside a box. Some food on the tray is given inside the box. The rat takes food from the tray and through this behaviour the rat is introduced to the experimental situations. At the outset, Skinner did not place the food product (food item) on the tray by pressing the switch. The food item was placed on the tray before hand. But in the next day Skinner placed the food item on the tray through the mechanical skill that is by pressing, the electric button after pushing the rat inside the box. This time also his intention was to get the rat acquainted with the experimental environment. The rat took the food from the tray after the food item had been placed on the tray. That is, the principal work of the experiment began in the next stage. One day after this the in

the hungry state was pushed into the box. Skinner began to observe the behaviour of the animal in this experimental situation. He observed that as soon as the rat was thrust into the box, it ran towards the tray and looked for food, because the rat get food first in the tray. So the rat ran towards the tray first. But as there was no food in the tray, the rat behaved in various types of searching behaviours for getting food. While doing these various sorts of searching behaviours, the rat once happened to press the button. Instantaneously, the food item was placed on the tray through the predetermined mechanical skill. In this way the method was repeated again and again, the rat entering the box able to bring to food on the tray by pressing the button.

After observing the behaviour of different animals in the box Skinner came to the conclusion that during the learning circumstances, the animals respond spontaneously. These responses belong to operant class, because before the presentation of the food-stimulus, these behaviours were performed. So these behaviours cannot be associated with the stimulus of food. The behaviour of pressing the button is also a same type of behaviour. With the performance of the behaviour of pressing the button, the food item which is another stimulus has been presented on the tray and the rat has quenched its hunger. Skinner has called this second stimulus as energy giving stimulus. In the repetition of the circumstances, it was noticed in the later time, the rat totally controlled the behaviour of pushing the button, that is the rat acquired the skill of learning. In going to give explanation of this learning. Skinner viewed—“If any energy giving stimulus follows any operant, the energy of that operant will increase”. It means learning takes place owing to the effect of response. The change in any behaviour will take place as soon as the man is rewarded with its performance. Here the second stimulus or energy giving stimulus is presented at the time when the animal is able to respond rightly or perform operant while making various types researching responses. the presentation of this second stimulus is determined by the responses of the animals. So Skinner has named this type of Conditioning as R type Conditioning. On the other hand he has named Pavlovian Conditions as S type Conditioning. The process of Operant Conditioning is shown with a sketch below :



So in the operant Conditioning three factors are connected with one another—These are two stimuli and one response, out of two stimuli one is learning situation and another is energy giving. The response is Spontaneous operant.

The operant Conditioning Theory is used variously in the school and outside the school and the field of learning various behaviours. The possibility of the application of this theory is very wide in the field of modern education.

5.5.4 The characteristics of Operant Conditioning

In order to realise the real significance of operant Conditioning as a learning skill, its fundamental characteristics need to be analysed. Skinner has adopted many important decisions on the long subject. Later on he has used those decisions in the field of explanation about man's learning process. Skinner in this context has pointed out 17 behavioural theories. These theories explain the real significance of operant Conditioning. The rules which are essential for Conditioning are as follows :

- (1) The primary preparation of the animal to cause operant Conditioning is desirable. So with preparation the behaviours of the animal are well adjusted. Skinner has viewed that unless the past behaviours of the animal are readjusted, investigating (researching) operant suitable to the present environment cannot be created. We find that Skinner in the first two phases of his experiment on the rat identified (introduced) the rate with the environment (circumstances). The same theory is applicable to man.
- (2) Energy giving stimulus is absolutely necessary for operant Conditioning. Skinner has used the energy giving stimulus in a special sense. Any stimulus that enhances the possibility of a response or behaviour is called energy giving stimulus. Skinner has opined that if the rate of performing response is increased by presenting any event of the environment as effective response, this event is called energy giving stimulus.
- (3) Another characteristic of operant Conditioning is that the long absence of energy giving stimulus decreases the energy (power) of operant Conditioning. That is, in operant Conditioning, the longevity of the acquired behaviour depends on the presentation of the energy giving stimulus. Skinner has determined some principles when and how this energy giving stimulus will be presented to keep up the energy of conditioned behaviour, on the basis of these principles is to be presented off and on in order to maintain the energy of the conditioned behaviour. Skinner spoke of four kinds of principles which are scheduled time based, changeable time based, fixed

ratio based and changeable ratio based. The system of presenting the energy giving stimulus following the principles one by one is called Schedule.

- (4) It has been observed in the case of operant Conditioning, the operant response may be restored in its former condition without re-connection. Only rest or break can increase the energy (power) of new behaviour in the operant Conditioning. When the possibility of any behaviour begins to decrease in the natural process and if the behaviour is not allowed to occur in that situation, it regains its full energy within a gap of some time.
- (5) In the operant Conditioning, the new behaviour performed by the animal originates in the animal spontaneously. In order to utilize the particular portion of the environment in the task of satisfying the demand, this kind of behaviour comes out from the animal spontaneously. So learning through operant conditioning is spontaneous. The activity of the animal is one of the characteristics of operant conditioning.
- (6) The laying of stimulus in the operant Conditioning does not take place just as it is done in Pavlovian Conditions. The Second stimulus here works as energy giving itself. This stimulus is presented on the successful response performance.
- (7) Though the animal responds spontaneously in the operant Conditioning, that spontaneous response may not help it for a long time to get at the goal. If the energy giving stimulus is presented till the desired response is done, the learning may come to stand-still situation. Skinner has remarked that in the operant conditioning the presentation of energy giving stimulus may be controlled by turn according to the objective. The name of this process is 'shaping'. In this system, firstly the learner makes as many as responses and the response which is closer to the objective is strengthened with the energy giving stimulus. Again, in the next stage, the response which is nearer to the objective than other responses is to be rewarded. In this way the ultimate objective of learning is possible to reach by rewarding one by one operant by turn. This is called 'Shaping'.
- (8) Another characteristic of operant is that in learning any complex subject some operants create a chain to assist in the performance of the last of all behaviour. This characteristic of operant Conditioning is called the process of forming a chain. Every one of this process works as a stimulus to create a behaviour in the former phase.

After the publication of the theory of operant Conditioning by Skinner, different psychologists and his assistants made lots of experiments and observations on this subject and analysed this process in various ways.

5.5.5 Educational Significance of Operant Conditioning

After making many experiments on the animals Skinner established the Theory of operant Conditioning. Skinner applied his this theory in the explanation of man's learning. The practicability and novelty of his theory has attracted the attention of the educationists of the whole world. The application of this theory has assisted in the introduction of many new concepts and strategic. The contribution of the operant Conditioning is unspeatable in originating the modern learning skills like Self-Learning strategy, programme method, learning instrument etc. Leaving aside these improved strategies (Skills), the teacher can make the task of teaching successful by applying the fundamental principles of this Theory of Conditioning in the general class room. The teacher can help the learners in learning successfully. In the general circumstances the teacher will have to utilise the fundamental theories in the class room.

Firstly, it is said that preparation is necessary in the learning of operant Conditioning. This preparation comes in the readjustment of the learner's previous experience. So the teacher will bring preparationnn in the learners to create the desired behaviour in the learners in school. Before presenting the subject matter directly, the teacher will make the learners acquainted with the required associated information. Then the learners will learn self-endeavour.

Secondly, according to this theory of Conditioning energy giving stimulus is required for learning. Every successful response of the learner is to be rewarded. There is the arrangement of giving prizes to the learners in our traditional systems. In order to make the principle of this theory effective, the energy giving stimulus is to be presented with the performance of responses. This work is made easy by informing the learners of the effect of their own responses, because the result of man's own effort supplies energy of the later effort. So the teacher informs the learners in the classroom of the effect of every response to reward them. This work can be easily done with the use of teaching instrument.

Thirdly, In the operant Conditiong the new behaviour is extracted spontaneously from the learner. Learning is not any burdened process. In order to apply this principle in the classroom, the learners will have to make the classroom environment active, because the

learners can respond spontaneously only in the environment suitable to learning. The learners will have to be given opportunity to respond independently in order to encourage their activity .

Fourthly, each one of full fledged complete behaviour is the co-ordinating chain of some operants. If a full fledged complete behaviour is to be created, operant processes will have to be formed by and by. For this the teacher will have to frame the plan before hand. After analysing the subject matter it will be separated in such small parts that the learners may be able to respond properly with a little effort. Besides this, these small parts of their subject matter are to be arranged serially and every helpfully energy giving stimulus is to be selected. In this way the work is to be done according to the previous plan and then only the teacher will help in teaching in a befitting way. It means, to prepare the plan before hand for smooth learning is absolutely necessary for a teacher. This sort of plan is called 'programme'.

Fifthly, in this Theory of Conditioning the system of giving punishment has been considered unnecessary. Skinner has commented that punishment is not helpful in strengthening any behaviour of the learner. So the teacher will use the real energy giving stimulus in the class room in place of inflicting punishment. Any sort of behaviour by the learner is treated fully unpunishable. After selecting the desired portion of the situation which, if possible, is rewarded, there will be no necessity of punishment.

Besides the above mentioned ways, the theory of operant Conditioning can be used in learning behaviour in the schools and outside the schools in various ways. This Theory of operant has supplied us many information regarding the nature of human behaviour and its changes. In the field of modern education the application of this theory is vast.

5.6 Montessori Learning Theory

The principal view of Montessori's Education Theory is liberty. Every child will receive education independently according to its own nature. It is unnatural to compel the child to do something by alluring it for a prize or frightening to chide (rebuke) it. The children are instinctively active. If they are confined to the bondage of class teaching, their natural course of development will be blocked. She has compared the children confined in the class room with the rows of butterflies stuck to the pins. Liberty does not mean giving

indulgence to lawlessness. She has meant the liberation of children from chains. Liberty will be restricted through the spontaneous inborn discipline.

Montessori system of Education speaks of the neatly compact all round development of the soul. Opportunity has been given to the child to learn with its own effort in this system of education. If the educational appliances are provided to the child, it will try to learn of its own. So Montessori has originated some toys. The toys are prepared in such a way that if a child makes any mistake, it will be able to correct the mistake by itself. This system of education is called 'Self Education'. The lady director should interfere in the child's work as less as possible.

There is no lady teacher in the Montessori School, but there exists the lady director. She will not rule (punish), but help (guide). She will always stand by the children with the affection and love of a mother. The lady director is to be well aware of child-psychology. The children will play, learn and work elsewhere with their own interest. the lady director will keep a vigil on them, encourage them, in required, play with them and work with them elsewhere. The children will be absorbed in their own works for hour after hour. Here is no compulsion, no force, no torture. She will not try to make the children work at the point of threat or temptation. The sign of discipline or good taste which the children-learners of children Home give singly or unitedly is the outcome of liberty. If the work of any child is interrupted, the lady director will interfere in that case.

Montessori in her Education Method has made the plan of Apparatus for the education of Sense Organs Consciousness. In this method of education there are the wooden bells of different sizes, wooden platform. Wooden ladder, closed Wooden box to produce different sounds, wooden coloured alphabets of big letters, different timbs written on the cards in the Card Board Box etc. The learners are taught how to identify colour, to develop touching power & memory power, to make a concept about different shapes and the sky, to have an idea about the letters and to count from 1 to 10 with the help of the number symbol sticks.

When the children come to school, they are taught about neatness and tidiness. They are also taught how to work hands and face, bathe, put on dress, clean the room, utensils etc. by and by, arrange the dining table and all these things by themselves. Arrangement is also made for the various types of toys for physical exercise and for music and dance.

The arrangement of gardening is done close to the school. Here the children acquire practical knowledge about plants through Nature reading. Besides there is also the

arrangements of rearing the cattle and other animals to earn direct knowledge about animal life.

The children are fond of drawing pictures. They are first trained to draw with the coloured pencils and later on with the painting brush.

In the Montessori Method writing and reading are taught simultaneously. The letters are cut out of thick paper and sand paper is attached to it. Then the children are taught how to run the finger on the letters. At the time of running the finger, the teacher will utter the letter or the word repeatedly and in this way she will get the child acquainted with the letter or the word. At the time of teaching counting, the assistance of rupee, anna and paise is taken first. The writing and reading of counting is taught with the help of the stick marked from 1 inch to 10 inches. Both the Kindergarten and Montessori Methods in the learning of Child Education have earned much popularity. The influence of Fraebel is seen in many cases in the Montessori Education Method. In our country Fraebel's Method of Education is known as Kindergarten Method. In the children's school the mixed methods have been followed in many cases. There is unity in both these two methods, but dissimilarities are none the less.

The attempt to place the child at the centre of education which began since the time of Rousseau, gained success in the twentieth century. The contribution of Montessori in the movement of Child Centered Education is immense. She put an end to the classroom education and in its place she introduced such Method of Education as created a new era of far reaching change in the field of education. Although all sorts of liberty is given in the child development, her Method of Education is not free from faults. She emphasised on sense organs education, but she did not give so much emphasis on the development of the power of imagination and constructive works. The system of Education with some particular apparatuses hinders the self development of the child to some extent. In spite of all these defects, Montessori Method of Education has widened our outlook in the field of education.

5.7 Summary

The process in the change of the behaviour owing to the influence (impact) of experience and training is learning. The process of learning occurs because of the influence of environment and sincere tenacity. Even if learning helps in the development of individual

life, it is not the natural process like পরিনামন. In going to determine the nature of learning the theory propagated by the Psychologists is called the Theory of Learning. These theories include Thorndike's Connection (Adding) Pavlov's Theory of Conditioning, Skinner's operant Conditioning and Theory of Montessori.

In going to explain Thorndike's Connection (Adding) Theory of Teaching, the animals in the Theory of Error give up the wrong attempts by and by and accept the correct responses. The eight principles of Thorndike's Learning are called the principles of learning out of these eight principles five principles are indirect principles and three principles are direct principles. the learning from these principles is very significant.

Under special condition, the process of the union of a stimulus with one unnatural response is called conditioning. In case of the mechanical repetition of vocational learning this theory is very effective. Skinner in his theory of operant Conditioning has mentioned the importance (implication) of the effect or of the energy giving stimulus.

Montessori has tried to introduce child centered education through Montessori Education Method. The child will receive education according to its own nature. Nothing will be done forcibly. If the child commits any mistake, the child itself will correct it, that is the child itself will learn through education. The sense organs of the child will develop. Getting up from bed the child itself will do all the works beginning from washing hands and face to bathing, washing clothes, putting on dress etc. The child will sing, dance etc. for physical exercise. It means, the child will make itself suitable to the reality.

Check Your Progress :

5. What is the theory of Learning?

6. How many Principal Theories of Thorndike are there and what are they?

7. How many kinds of Principles has Skinner spoken of and what are these?

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8. What are the main words of Montessori's Principles of Education?

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5.8 Exercises

1. Answer the following questions very briefly (in not more than 30 words).

- (a) Mention two characteristics of learning.
- (b) What is the principal idea of Thorndike's Preparation Theory?
- (c) What is Shaping?

2. Answer in brief (in not more than 150 words).

- (a) How does learning depend on motivation?
- (b) What is the main idea of the principle of acquiring effect (result, outcome)?
- (c) What is meant by the main word 'Liberty' in Montessori's Education Theory?

3. Answer the following questions to the point.

- (a) Explain the Skinner's Learning Theory of Operant Conditioning.
- (b) Narrate the indirect principles of Thorndike.
- (c) Discuss the importance of Montessori Method in Pre-Primary Education.

5.9 Answer Hints

1. Realising the ability and Weakness of the learner through training, the change in the behaviour of the child, the determination of the nature of learning, principles, efforts in the field of learning, the theory of errors, operant theory, implication of Montessori Theory etc. can be known.
2. (a) Heredity, Environment; (b) Skilful learning, Cognitive Learning, Emotional Learning; (c) পরিণমন.
3. Past experiences and the process of changes in behaviour under the influence of training is called learning.
4. The attitude of the process of giving permanency to the tendency of Emotional Behaviour is called learning.
5. To carry on experiment on the animals in a well controlled situation in the laboratory is easy and correct.

Different psychologists experimented in various ways propagated their different views. These opinions (views) are called the theories of learning.

6. Three Principles—The Principle of achieving success, the Principle of Practice (Exercise) and the Principle of Preparation.
7. Four moral laws—Definite time based—Changeable time based, Fixed Ratio based and Changeable Ratio based.
8. The main theme of Montessori Education Theory is—liberty, neither reward nor blemish, Self-Education System, A Presence of no teacher, Presence of lady director, Projects for different Didactic Apparatus, Teaching of self-sufficiency etc.

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Unit 6 Health and Hygiene

Structure

- 6.0 Objectives**
- 6.1 Introduction**
- 6.2 Preface**
- 6.3 Historical Development**
 - 6.3.1 Medical treatment during British period**
 - 6.3.2 Sanitary work**
 - 6.3.3 Vaccination**
 - 6.3.4 Curative Health**
- 6.4 Health and Hygiene**
 - 6.4.1 Meaning**
 - 6.4.2 Health Education**
 - 6.4.3 How to remain healthy**
 - 6.4.4 Nature**
 - 6.4.5 Concept**
- 6.5 Summary**
- 6.6 Exercises**

6.0 Objectives

Studying this unit on Health, Hygiene and Sanitation, we will be able to know, understand and write on the following topics.

- Know about different methods of maintaining health and hygiene and apply those in real life situation.
- Give a concept to the students about health-hygiene and sanitation after knowing them properly.

- Know how we arrived at this present state of health and hygiene through historical development.
- Understand and intimate the students about the meaning, nature and concept of Health and Hygiene.

6.1 Introduction

In order to form a disease free society we have to be conscious about health. A student should have the knowledge of physical and mental health. This chapter will deal with the concept of health, the historical development of the concept from ancient time to present one and ways of being healthy. In fact, with the discovery of the system of vaccination, the death rate of mother and child is much lowered. Besides, people are aware of different germs of diseases and following rules of health and hygiene as a result, the diseases due to infection are less.

6.2 Preface

Man always remains busy in quest of health and happiness. These two are interdependent. It is essential that one should be able to differentiate good habits from bad habits for the sake of healthy living.

Again good health depends on mental peace. Mental defections is detrimental to health. From broader view the knowledge of hygiene, good habits should not be kept confined within self and family, it should be spreaded all over the society so that we can build up a society free from diseases.

However, the following things should be given most importance in case of learning of hygiene. (A) Man has to detect the habits which are beneficial for health and observe them. (B) Man has to detect the habits which are not beneficial for health and reject them. (C) Man should not do anything which is harmful for health. 'Health is wealth'—this proverb should be given due weightage.

The concept of health cannot be changed unless proper health education is not given during childhood. A healthy child can be an ideal citizen in future. A healthy child can only

learn properly, develops his personality, can use learnt matter in future for self and the country. The case is opposite for the students who are of weak health.

Check Your Progress :

What will happen if the students are weak in health?

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After analysing different aspects, it can be concluded that besides general education health education should be provided at the school. This health education will help the students to bring overall development. To achieve this aim administration, health dept. teachers, parents and children should work together in a proper co-ordinated way. Specially the role of teacher is very important in this regard.

6.3 Historical Development

In the Bible (new testament), the Koran there are many rules on personal hygiene. Dead bodies are considered unhygienic, it may contaminate the earth surface. Hence dead human bodies are buried within a coffin or burnt out.

It is observed that hygiene and sanitation were given importance during Greek, Roman and Egyptian civilization. There were separate arrangement of bathroom, toilet and urinal for people. People used soap for cleaning hair; care was taken for supply of water at places of sanitation; arrangement of digging well was there. These ancient civilizations put special emphasis on personal cleanliness and disposal of contaminated matter.

In the nineteenth century a new horizon was open with the discovery of preventives of contagious diseases. For example—John Snow in 1854, discovered that contaminated water is the cause of Cholera Dr. Semmelweis in 1845, suggested doctors that hands should be thoroughly washed while dealing with a new born baby. Lou Pastuer showed how micro germs create different diseases.

Check Your Progress :

1. How the horizon in the field of medical treatment opened?

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At the time of Industrial revolution in Europe, that is, in nineteenth century the system of drainage and other sanitary conditions were developed, care was taken to prevent water supply system free from germs of contagious diseases. Later, the concept of environmental health was developed. This concept tries to establish relationship between human health and the factors of environment. If environment is not controlled, physical, mental and social health of human being may be endangered. WHO is trying to keep a balance in environment world wide.

6.3 Cancer, heart diseases are mainly due to imbalances in environmental health and improper lifestyle

6.3.1 Medical Treatment during British period

First Medical Officer of East India Company arrived India in 1600. In fact, he was a surgeon of a ship. In 1764, when the rule of Company came into force after the battle of Pallasey, the Medical Department in India was established which provided treatment to Company-army and their men. In 1868, a separate Medical Board in Bengal started functioning. In 1869, Public Health Commissioner was appointed on behalf of Govt. of India. In 1896, Indian Medical Service (I.M.S.) was constituted. After 1919, Public Health Sanitation came under the control of the state.

Check Your Progress :

1. When Public Health Commissioner was established?

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Central Advisory Board of Health was constituted in 1937 and it was under the control of a Commissioner. Health, Survey and Development Committee (Bhore Committee) was appointed in the year 1946, headed by a Director General. Under the Director General worked Deputy Director General, Sanitary Commissioner and other Administrative Staff.

Madras General Hospital and Presidency General (S.S.K.M.) were established in the year 1679 and 1796 respectively.

Check Your Progress :

1. Presidency General Hospital, when it was established? Mention its present name.

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Some important dates :

1835—Calcutta Medical College.

1852—Medical College Hospital, Calcutta.

1860—Lohore Medical College.

1930—All India Institute of Hygiene and Public Health.

1939—Rural Health Training Centre.

6.3.2 Sanitary Work

Important Events :

1859—Sanitary Works Start (As per Royal Commission Report).

1863—Sanitary Report produced by British Army. The report recommends development of sanitation programme at each presidency; to protect British Army from epidemic and maintaining personal health of the soldiers, the sanitary system should be developed; civil sanitary Board to be formed at each province.

1870—Formation of Central Sanitary Department (Sanitary Dept. & Vaccination Dept. joined together 1872-1879) at each province.

1885—Lord Ripon through local govt. developed the Sanitary System.

1912—India Govt. appointed deputy Sanitary Commissioner and Health Officer.

6.3.3 Vaccination

Important Events :

Discovery of Small Pox Vaccine.

1802—Appointment of Superintendent general of vaccination.

1870—The work of vaccination comes under Sanitary Dept.

1880—Enactment in favour of compulsory vaccination—Municipality & Cantonment area (Vaccination for Small Pox and Plague).

1873—Record Registration of Death and Birth.

1868—Convention of International Sanitary conference.

1868—Special arrangement of cleaning hospital, cantonment area, festival spots after the great epidemic (Cholera).

1884—Establishment of Medical Laboratory and public health laboratory at Simla.

1907—Establishment of Indian Pasteur Institute.

1911—Building up Indian Research Fund.

Check Your Progress :

1. When Indian Pasteur Institute was established?

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British Govt. ignored the local systems of treatment and developed Allopathy. Indian Medical Service was established. Following vaccination programme—Small Pox, Leprosy and Malaria were controlled. Epidemic in the form of Cholera and Plague was controlled remarkably. In fact, it is the effect of research conducted by the Indian Medical Service.

WHO and UNICEF at present time put more emphasis on health education as a separate subject. The concept—“Health for all” has been given due importance. In general the health of common Indians is at low ebb, many factors are related to this, like—Polluted dirty environment, unscientific lifestyle, ignorance, superstition etc. It is true that most of the problems related to hygiene can be solved by spreading health education throughout the country.

Check Your Progress :

1. What type of Education is required to solve the problems related to health and hygiene?

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Tetanus—Diphtheria—Polio—Measles—TB; these diseases can be prevented by increasing preventive power. For the purpose vaccination/injection can be provided. this is one way for being healthy.

Again personal cleanliness and environmental cleanliness can help us to remain healthy.

Regular exercise, Yoga; Pranayam can make us healthy. Intake of balanced food can also meet up various deficiency of our body and helps us to be healthy.

6.3.4 Curative Health

Diseases like Blindness, Malaria, Leprosy can be cured by proper medical treatment.

6.4 Health and Hygiene : Meaning, Nature and Concept

6.4.1 Meaning

World Health Organisation (WHO) defined health as—“A state of complete physical, mental and social well-being, not merely the absence of disease or infirmity.”

A person is called healthy only when he can exert his physical, mental, emotional and social qualities to the maximum in his daily work.

‘Health is wealth’—this wealth can only be achieved by continuous effort and practice.

6.4.2 Health Education

Health education make a person aware of the following :

- Ways and techniques of healthy life.
- Knowledge of prevention of diseases.
- Knowledge of physical, mental and environmental health.
- Knowledge of community health and community health centres.

6.4.3 How to remain healthy

We have to achieve a state of complete physical, mental, emotional and social well being to be healthy. Necessarily we should be disease free but this is not the only condition.

6.4.4 Nature

The term ‘health’ is not related to environmental factor but also to living beings—animals and plants. With the evolution, life becomes more finer and developed. The term

‘health’ is closely related with this. When a tree is bloomed with flowers with green leaf we call it healthy, when it becomes thin and dry we call it—ill, similarly an animal with life, proportionate growth of Limbs; there is a co-ordination of functioning amongst them—we call it a healthy state.

“Hygia” is a Greek word, the word means the goddess of health. Hygiene is derived from the word hygia. Hygiene means—Knowledge of health which contains objective knowledge on health based on experimentation. Hygiene also contains some general truth and rules about health. These rules are discovered on the basis of scientific observation and experimentation, the result of following these rules helped someone to be healthy, to remain free from diseases, to enhance the power of prevention. The key words of health are activity and co-ordination.

Check Your Progress :

1. From where the term hygiene derived?

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6.4.5 Concept

During Vedic period the system of ‘Chaturashram’ was on vogue; the first phase was “Brahmacharjashram”. During this period a child’s education started at ‘Ashram’ under the guidance of ‘Guru’. The following principles in the educational system were given importance. Physical tolerance, sacrifice, devotion and ‘bairagya’. On the other hand, the western education mainly laid importance on formation of strong body. In ancient time the person who was the strongest among other was selected as the leader of a group. From this fact it can be guessed that there were some techniques to build up strong bodies.

With the development of civilization the concept of education had been changed. Hygiene finds its place within the science of education. Healthy mind can only live within a healthy body. Again without a healthy mind it is not possible to learn properly. Knowledge of hygiene is essential for keeping health properly.

Before independence hygiene was included as a compulsory subject, this subject dealt with detection of diseases, rules of presentation, healthy habits etc. Unfortunately after independence schools did not take special initiative to form health consciousness among students. At present, the Supreme Court urged Govt. of India to take initiative in this field.

Check Your Progress :

1. What do you mean by 'Brahmacharyashram'?

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6.5 Summary

'Health is Wealth'. We have to know which habits, things are healthy and which are detrimental to health. Many school going students are possessing weak health. Beside developing physical and mental health it is important that a student should acquire sufficient knowledge about health. In ancient time dead bodies were buried or burnt. Personal cleanliness was given importance.

Average life span of man has been increased after important discoveries in medical science like existence of group treatment of communicable diseases, vaccination, etc.

In 1897 Pasteur discovered the causes of Malaria.

In 1900 Indian Pasteur Institute was established for the treatment of rabies. After Alma Ata conference in 1978, WHO and UNICEF took special initiative to propagate newer ideas in the field of public health and hygiene.

6.6 Exercise

Essay Type Question :

1. In ancient time, how the health-rules were followed?
2. What do you mean by 'Environmental health'? How the health of environment can be maintained?
3. How the system of treatment was developed gradually during British period?
4. 'Health is Wealth.'—Explain.
5. What do you mean by health and hygiene?

Short Answer Type Question :

1. When health education at school should be started?
2. How a teacher makes students conscious about health education?
3. How hygiene and sanitation were given importance in ancient Europe?
4. Why Pastuer was famous?
5. What were the recommendations of Bhore Committee?
6. What Vaccinations are applied to enhance the power of resistance among children?
7. Explain the concept of hygiene in ancient India?

Very Short Answer Type :

1. Why health is termed as wealth?
2. What will be the problem with the child if he is not healthy?
3. What is meant by health education?
4. Why Dr. Semmelweis was famous?
5. What is the full form of WHO?
6. When Calcutta Medical College was established?
7. What is the meaning of the term 'Hygiene'?

Unit 7 Mother and Child

Structure

7.0 Objectives

7.1 Introduction

7.2 Role of Mother in formation of habit

7.3 Parental Control

7.4 Summary

7.5 Exercise

7.0 Objectives

After reading the unit ‘Mother and Child’ the learners will know, understand and write on the following topics.

- Know what is made by habit.
- Know how to build-up or form good habits.
- Know about the inter dependence between man and nature.
- Learn to respect human qualities, values and dignity of Labour.
- Learn to remain unmoved in situations like success & failure, good & bad.
- Know about personal cleanliness, at the same time remain alert about food.

7.1 Introduction

In formation of habit mother’s role is most important in fact, when essential daily habits are formed mother and child both remain healthy. It is through formation of habits different values are created. In early phase of life if the parents can control properly their child, he will be in future a healthy person. While in childhood child grows an affection towards different animals; as a result, in later period of life child will be able to love all categories

of animal. Personal cleanliness, and necessity to keep environment neat and clean are two very important habits. Which can be developed in childhood under the guidance of parents.

7.2 Role of Mother in formation of habits

Mother is child's first friend and guide of his life. She plays the most important role in forming good habits of a child. They are as follows :

- (1) To form the habit of drinking water, taking food, bath, brushing daily in a particular time.
- (2) The child will know the function of different limbs of the body. At the same time, know how to keep hands, legs, eyes, ears, nose and hair clean and healthy.
- (3) Child will form the habit of bathing daily.
- (4) Child will be given different information on natural beauty, birds and animals, trees so that they can form the concept how man and nature are interdependent.
- (5) Children will in a group, clean their classroom, school ground. As a result they will learn the dignity of Labour, Physical work.
- (6) It is also essential for the children to participate in dancing and singing, through such participation the values, the spirit of co-operation and tolerance will be developed.
- (7) The child should be advised to help his friends in their difficult time.
- (8) Child will learn to take care of Pet animals.
- (9) The child will be motivated to be involved in social activities with friends in school and at his place of dwelling with others.
- (10) Child should take part in games and sports, Yogasan for his physical, mental and emotional development.
- (11) Child should be given the training so that he can accept success and failure in a normal way.
- (12) For self development child will be motivated to take part in dance, singing, drawing, making earth made objects etc.
- (13) Child should be inspired to be punctual, regular and truthfull. He should learn to pay respect to others.

- (14) Child should be encouraged to speak the truth in case he does some wrong things.
- (15) Child should take part in local festivals with enthusiasm.
- (16) Child should be encouraged to develop co-operation and tolerance by participating in group activities like dance etc.
- (17) Child should be allowed to take part in different types of work at home and school; this participation will enhance their sense of responsibility.

Check Your Progress :

What should be done for the self-development of a child?

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7.3 Parental Control

- Each day, every morning parent should take care so that child washes his hands, legs and face properly; after using toilet he should clean his hands with a soap but in no case with ash/soil etc. because such substances may contain eggs of worm.
- Each day child should take bath, specially when the weather remains hot and humid. Parents should take care that after games and sports children should clean their bodies to remove sweat, dust.

Daily bath saves skin from infection, dandruff, rash and irritations.

Check Your Progress :

Why daily bath is essential?

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- Walking on street in barefoot may cause many difficulties, because different type of worms may get into the body of a child from soil hookworms after getting entry can absorb blood causing anaemia.

Check Your Progress :

What is the effect of walking on street/soil bare footed?

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- Each day child should brush his teeth with toothpaste and toothbrush (in case of non-availability with salt/soda).
- Special care should be taken so that child uses toilet. If there be any excretion of other animals around house should be cleared regularly.
- Dog and Cat spread the germs of diseases, so parent should take care of the matter. Pets should not be allowed on the beds.
- Lice can create different diseases. Hair should be kept clean of lice.
- Splitting on floor, wall is a bad habit, its spreads germs of diseases hence should be stopped.
- While coughing one should put handkerchief on face.

Check Your Progress :

What precautions should be taken while someone coughs due to cold?

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- Boiled drinking water is ideal for intake; it prevents water-borne diseases like cholera, typhoid and hepatitis etc. Boiled water can be stored for cooling in a earthen pot. However, standard water purifier can also be used. Plastic bottles after proper cleaning can be used for storing of drinking water.
- Half-boil/Green vegetables-food is detrimental to health, food should be properly cooked, parent should take care so that child does not consume food which is not kept properly i.e. without cover.

Check Your Progress :

What should be the quality of drinking water?

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- Food plates should be perfectly clean.
- Ill child should not be allowed to sleep with other children.
- The child who is suffering from skin diseases should not be allowed to sleep with normal healthy child.
- Child suffering for communicable diseases like Whooping cough, Measles and general cough and cold should be kept separately from normal healthy children.
- A child suffering from cough for long days/TB should be treated immediately. Child should use handkerchief while coughing.
- Parent should take care so that a child bathe regularly, dress properly and cut nails in time. through nails while taking food germs may enter into body.
- Child should form the habit of taking healthy balanced food. This habit will help him to prevent different diseases.
- Training should be provided to form the habit of taking part in games and sports, exercise, pranayam etc. such habit will help him to form right mentality and physique.

7.4 Summary

Mother's role in formation of daily habit is of most importance. After sleep in every morning, washing, bath, personal cleanliness should be maintained. Child will learn to dance, to sing, to draw for self development, besides parental role is very important in creation of mental values, co-operation and tolerance. Besides, child should be encouraged to speak the truth; to participate in different social ceremonies which will bring social development. Participation in different works of school and home is also very important. For a balanced physical and mental health personal cleanliness, consumption of healthy food, participation in games and sports are very important.

7.5 Exercises

Essay Type Question :

1. State the role of mother in formation of habits of a child.
2. Why parental control is necessary for a growing child?

Short Answer Type Question :

1. What habits to be formed in childhood for cleanliness?
2. How value education to be imparted in childhood?
3. What is the importance of games & sports in childhood?
4. Why one should not walk in bare-foot?
5. What consciousness should be formed in the matter of consumption of food?

Very Short Answer Type Questions :

1. What should a child do for self development?
2. Why child should be encouraged to participate in the work of school and home?
3. Why one should bathe daily?
4. What precautions should be taken while drinking water?

Unit 8 ☐ Child-Health—Healthy Mother

Structure

- 8.0 Objectives**
- 8.1 Introduction**
- 8.2 Healthy Mother**
 - 8.2.1 What should not be done**
- 8.3 Role of mother in development of the child**
- 8.4 Nutrition**
- 8.5 Child's normal growth and food chart**
- 8.6 Nutrition—Sources and their function**
- 8.7 Health Check Up**
- 8.8 Summary**
- 8.9 Exercises**

8.0 objectives

Child health is an very important matter. This unit contains some essential informations. After reading the unit, learner will know, understand the following topics.

- What is meant by a 'healthy mother'?
- What should be done to keep our body and mind healthy?
- What is the role of mother in the development of child's health?
- How to prepare a food chart for normal physical development of a child.
- What factors are detrimental for a healthy life?

8.1 Introduction

Child's health is closely related with his mother's health. Hence we require healthy mother first. Child's proper physical development depends on nutritions and balanced

food. Mother should know which food is appropriate for him. So she has to know the food value of different items. She has to keep clean daily appliances and form healthy habits also.

8.2 Healthy Mother

Only a healthy mother can help her child to be healthy—physically and mentally. As mother is the first shelter of child and he immitates her mother closely. To be healthy, a mother should follow some rules.

- Consumption of balanced and nutritious food daily in particular time. Proper knowledge about food.
- Taking six glasses of pure water daily.
- Getting up early in the morning; eight hours of sleep is required.
- Daily exercise, Yoga, ‘Pranayama’ for physical fitness.
- Washing hands before taking food.
- Control over emotions, patience.
- Avoiding sleep by day time.
- Not giving any false promise.
- Leading a life based on morality and spirituality.
- Keeping perfect social relationship with other members of the family.
- Remaining joyful always.

8.2.1 What should not be done

- Less consumption of food containing sugar and fat.
- No sleeping during day time.
- Avoid wine, cigarette etc.
- Keeping own body weight as per height and age.
- Avoid stale food, food kept without cover, food on street.

8.3 Role of Mother in Development of the Child

Child after birth depends solely on parents for his elementary needs. Needs are mainly physical and mental. Child while taking milk from his mother's breast looks his mother's bright smiling face. Mother's love, congenial home environment, freedom, help child to develop his personality in the right direction. On the other hand, in different attitude toward child, neglecting his needs, quarrelling atmosphere, lack of affection retard his mental development. Child likes to play with others and the process of socialization starts right from his home.

Check Your Progress :

How a child adjusts with his home and environment?

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8.4 Nutrition

Parents play an important influential role in the development of child. They render affection, care, specially parents should be conscious about the nutritional value of different food suitable for child at different age and formation of right food habit. Besides care should be taken so that child develops morally.

Nutrition—Factors, Source, Function and diseases

Factors of Nutrition	Source	Function	Diseases due to deficiency, comparison
Protein	Milk, Milk products, Fish, Egg, Meat, Nuts	Growth of body, Enhancement of Preventive power	Less growth with age, poor weight, less preventive power

Factors of Nutrition	Source	Function	Diseases due to deficiency, comparison
Carbo-hydrates	Rice, wheat, cornflex, potato, sugarcane, sugar, honey, molasses	Generation of more calorie, enhance working power	Thining/Less preventive power
Oil and Fat	Nuts, milk, ghee, butter, fish, meat, egg	Enhances calorie and work power	Slim structure, less preventive power
Vitamin-A	Fish, liver, milk, ghee, butter, egg, greanleaf vegetables	Healthy skin	Night blindness, rough skin
Vitamin-B	Nuts, peas, rice with brown coating	Normal appetite, helps in digestion, keeps nervous system normal	Loss of appetite, indigestion, Beriberi
Vitamin-B ₁₂	Milk, milk product, egg, green leaf vogs., pulses, cereals	Keeps mouth, eyes? helps in digestion	Indigestion, wound inside mouth and on tounge, problems of eyes
Vitamin-C	Fresh fruits (lemon, amlaki, green leaf vogs.)	Keeps gum strong, Enhances preventive power	Bleeding from gums
Vitamin-D	Cod liver oil, egg, milk, cereals	This vitamin forms under skin in presence of sunlight. Helps infor-mation of teeth and bone.	Ricket/complications of bone.

8.5 Food chart of child for normal growth

Serial	Age (month)	Normal weight (kg)	Food chart for normal growth
1.	New born baby	2.5 and above	Mother's breast milk only
2.	6	5.95 and above	Mothers milk, boiled potato, suji
3.	7	6.3 and above	Do
4.	9	7 and above	Ripe banana, oil, butter
5.	10	7.3 and above	Do
6.	12	7.8 and above	All food used in home boiled green vegetables, rice, dal, milk, banana, ripe-papaya, etc.
7.	18	9.1 and above	Do
8.	24	Above 10	Do
9.	36	Above 11.6	Do
10.	48	Above 13.2	Do
11.	54	Above 14	Do
12.	60	Above 17	Do

8.6 Nutrition-Sources and their function

Factors of nutrition	Source	Function	Diseases due to deficiency
Folic Acid	Green leaf, veges, meat, egg, milk, corals	Formation of red corpuscles, Strengthening of nerves	Anemia and the diseases of nerves

Factors of nutrition	Source	Function	Diseases due to deficiency
Vitamin B-12 Calcium Phosphorus	Meat, livers, fish egg, milk products green vegs, corals (specially 'Rage')	Helps to form bone and teeth, keeps muscles and nerves normal.	Ricket, bones do not grow normally
Iron	Livers, meat, fish green vegs, specially Dhania, Methi etc.	Helps to generate Haemoglobin in blood	Anemia
Iodine	Fish (Specially sea fishes) vegetables, cereals pulses	Helps in secreation of hormones from thyroid gland, help full in keeping physical and mental health normal	Improper growth goitre, low intelligence

Check Your Progress :

1. What are the diseases caused due to deficiency of Calcium?

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2. How child's self confidence develops ?

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8.7 Health Check up

We should check up the following points to ensure that we follow a healthy life style.

- Always kitchen including all utensils to be kept clean
- Refrigerator temp to be controlled properly- 4°C to 5°C cooked food and vegetables should be preserved separately, cooked food after cooling to be preserved in pots with lids.
- Child's hands to be washed properly after toilet, play at field playing with pets, before meal and after cleaning nose.
- Before using packet food, date of manufacture and date of expiry to be noticed.
- Formation of some healthy habits like- cutting nail once a week, daily use of soap, during bath using shampoo twice a week, keeping toilet pan free from germs, using own clean towel and comb, cleaning bathroom's door, handle and tap clean, regular brushing of teeth specially after taking meal.
- Cleaning ashtray daily and keeping it out of reach of children.
- Wet unclean cloths should not be at kitchen
- Before spraying to get rid of mosquitos, flies, insects the food should be well covered with lids
- All toys to be kept clean as children often put them in mouth
- Pet's movement should be restricted; pet's food pots to be kept separately
- Smoking inside room to be stopped to save passive smokers.
- Vaccination of members of family in appropriate time.
- Cutting nails regularly at least once a week

What do you know about vaccination programme?

8.8 Summary

If a mother wants to remain fit and healthy she has to form some good habits and leave some habits already formed. The role of home (family) and parents in the physical and mental development of a child is at immense importance considering his age a child should be provided with such food which is nutritious and helpful for development. Diseases caused due to malnutrition should be treated. Properly before cooking the vegetables to be washed in clean water and the kitchen to be kept neat and clean, free from germs. Besides personal cleanliness, care should be taken to keep the items of daily use clean.

8.9 Exercise

Essay Type Question :

1. What do you mean by healthy mother?
2. Discuss the role of parents in the physical and mental development of a child.
3. What do you mean by balanced food. What is the difference between balanced food and nutritious food?
4. Each day after completion of cooking what special care should be taken in order to keep kitchen healthy?

Short Answer Type Question :

1. What steps should be taken for being healthy?
2. Why childhood is so important for individual's health and hygiene?
3. What are the sources of protein?
4. What steps should be taken to keep your teeth healthy?
5. What is the importance of vaccination in case of a child?

Very Short Answer Type Question :

- 1, To whom a child imitates first?
2. How many hours of daily sleep is required?

3. How child's confidence can be enhanced?
4. State the cause of 'night blindness'.
5. Why we need food containing oil or fat?
6. Name the source of Vit B complex?
7. Name of disease caused due to shortage of Iodine?
8. While purchasing packet food what should be noticed first.
9. At what temp a refrigerators should function?
10. How would you clean the cloths of a child?

Unit 9 □ Individual Cleanliness

Structure

9.0 Objective

9.1 Introduction

9.2 Care of Skin

9.2.1 Remedies

9.3 Case of Hair

9.4 Care of Teeth

9.4.1 Remedies

9.5 Care of Eyes

9.5.1 Consciousness

about care of eyes

9.6 Care of Ears

9.0 Objectives

After going through the chapter, we shall be able to comprehend, read and write the following topics

- What is meant by personal/individual cleanliness?
- Cleaning of the environment
- Communicable diseases : causes, way of spreading
- Prevention of communicable diseases
- Care of skin
- Care of hair and teeth
- Care of eyes and ears

9.1 Introduction

Personal cleanliness is the primary requirement for maintenance of health. Skin preserves body in many a ways. If skin is not clean our body is infected by many diseases. It is also important to take proper care of hair, tooth and ear. It is necessary to keep our environment free from germs in order to get rid of diseases. Gradually from ancient time to the present the sanitation system and personal cleanliness developed through evolution. New discoveries, human need and health consciousness gifted human beings long life. Now with the right knowledge of communicable diseases their causes and remedies, man can lead a healthy life.

Wealthy mind dwells in a healthy body. It is our primary duty to keep clean our skin, hair, ears nail, nose and eye for a healthy living, In brief, personal cleanliness means taking care of our all senses and limbs

9.2 Care of Skin

Skin is an important part of our body. It protects our body. It is due to skin that many germs of diseases can not enter into body. The feeling of touch is with the skin. Skin's sensitivity can be realised when we exert pressure or come in contact with cold and hot situation. Further skin helps to keep balance of temperature of body. Like kidney skin also helps to excrete polluted substances from body. When skin comes the contact with dirt, due to the environment the sweat gland of skin are closed, it is infected with many diseases like ringworm, scabies etc.

9.2.1 Remedies

- Taking daily bath using soap which is one of the chief items of cleaning
- Joint of limbs, shoulder, neck should be cleaned while bathing to remove accumulated dirt.

9.3 Care of Hair

The healthy condition of hair depends on daily food habit and physical health. Excitement, physical and mental anxiety, lack of balanced food can cause damage to hair. If proper care is not taken; dandruff, lice may appear.

9.3.1 Remedies

- Daily bath using shampoo twice a week
- Combing with comb at least twice a day
- Using louse remover medicine if there be any
- Keeping hair dry after bath
- Long hair, colouring of hair not desirable
- Massage of scalp is beneficial as it stimulates blood circulation and supplies nutrition to roots
- Doctor's advice should be followed to stop falling of hair.

9.4 Care of Teeth

- Oral hygiene is most important. Oral hygiene keeps teeth germs away inside mouth healthy
- Teeth not only help to chew food properly but also help to pronounce clearly and teeth keep the structure of face nice.
- Pyorrhea is a painful disease, gradually it weakens gums as a result all the teeth may fall.
- Spongy gum is a disease of teeth. Gums start bleeding even in case of minor injury. Deficiency of Vit C causes such disorder.
- In case oral hygiene is not maintained many problems can crop up, like bad odour in respiration, diseases of nose throat and tonsil damage of enamel of teeth, formation of bacteria due to decomposition of food particles inside mouth etc.

9.4.1 Remedies

- Brush properly at least twice a day.
- Brush within 15/20 minutes after taking meal as the food parts in mouth start forming acid thereafter.
- Clean tongue with warm water daily. As a result throat is also cleaned..
- Deterioration of teeth starts with the lack or excess of fluoride in drinking water (Fluoride content per litre of drinking water should be 0.5 to 0.8 ml.
- It is a good habit to visit dentist twice a year

Check Your Progress :

How enamel of tooth is damaged?

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- Excess of carbohydrate food damages tooth
- Keeping feeding bottle, sweets for a long time cause damage of tooth
- Food like milk, egg containing Vitamin A C and E calcium should be consumed.
- Consumption of excess fried food, chewing tobacco should be avoided.

What type of food should be taken to prevent decaying of teeth

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9.5 Care of Eyes

Eyes are the window of visual world, most important amongst our five senses. Lack of care of eyes may lead to various disease as follows which may even cause blindness.

- Conjunctivities, Trachoma
- Corneal ulcer
- Night blindness
- Difficulty in viewing near and far objects
- Cataract, Glaucoma etc.

9.5.1 Consciousness about care of eyes

- Eyes are very sensitive.
- Consult doctor in case eyes turn red or become painful.
- Consumption of balanced food.
- Ensure intake of Vit-A to avoid night blindness.
- Burning fire crackers safely during festival.
- Avoiding very strong or poor light during study
- Keeping study material/book at an appropriate distance
- Viewing TV from a safe distance
- Washing eyes regularly with cold water to avoid existence of any external particle.

9.6 Case of Ears

Ears not only help us to hear but also maintain the balance of our body. To keep this important limb healthy and effective ears should be cleaned regularly. We should avoid entry of any foreign article inside. Formation of pus, injury doctor should be consulted in case of difficulty.

Unit 10 □ Meaning and Concept of Personal Cleanliness

Structure

10.1 Meaning

10.2 Concept

10.2.1 Medieval Period

10.2.2 Modern Period

10.3 Environment and Sanitation

10.3.1 Air

10.3.2 Water

10.3.3 House/House Sanitation

10.3.4 Food and Sanitation

10.4 Disposal of waste product

10.4.1 Solid waste product

10.4.2 Liquid waste product

10.4.3 Gaseous waste product

10.5 Transmission of communicable Diseases

10.5.1 Classification of communicable diseases

10.5.2 Carrier/agents of communicable diseases

10.5.3 How communicable diseases spread?

10.5.4 Diarrhoeae

10.5.5 Dysentery

10.5.6 Cholera

10.5.7 Typhoid

10.5.8 Hepatitis

10.5.9 Malaria

10.5.10 Influenza

10.5.11 Common cold

10.5.12 Cough

10.5.13 Conjunctivitis

10.6 Summary

10.7 Exercises

10.1 Meaning

‘Health is wealth’. The age old comment of the philosophers is a truth for all the time. World Health Organization has given a comprehensive definition of health. “A state of complete physical, mental and social well being, not merely the absence of diseases or infirmity.”

Health is viewed as inborn dementely right and essence of productive human life. Some important characteristics of diseases.

- Disease reduces the function of any limb or any part of human body.
- It is a state of uneasiness and a barrier of normal working.
- The effect of disease is sometime immediate and severe (Food poisoning) sometime its effect is gradual (AIDS, Malnutrition etc)
- There are many reasons behind communicable diseases. Through different agents of environment the germs of diseases enter into human body and multiplied.

Sanitation

Individual cleanliness and clean environment are the two basic conditions of health and life. Care should be taken on the following issues for sanitation.

- Pure drinking water
- Personal cleanliness
- Clean drainage system
- Pollution free atmosphere
- Aviodance of food poisoning
- Recycling of garbage

- Placing waste product at the right space.

10.2 Concept

Ancient Period

From history we come to know that in ancient Rome people used toilets. Toilets for people were attached with latrines and arrangement of supplying water was there. The buckets kept at latrine were called ‘Dolia Kurta’—the pot used for urination. Urine was used as ammonia and used for cleaning purposes people generally used dirty, unclean cloths; rarely cloths were cleaned. Sometime the clothes were dipped into river water, squeezed and dried up by the washermen.

Check Your Progress :

What do you mean by ‘Dolia Kurta’? state its uses

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The credit of discovery of soap goes to celts of Gaul, Animal fat was used for preparation of soap, although under developed, was more effective than olive oil or coarse salt.

The system of hair-care was peculiar. Men cut their hair on leisure time with an instrument called. Strigil, its handle was made of ivory, oil was used on upper part of hair but not water as a result, saving was painful. Roman emperor Augustus told that he suffered from wound on face due to frequent saving of hair and beard

10.2.1 Medieval period

The system of cleanliness, bathing gradually developed. Books were published on health consciousness. Although germs were not discovered but the books suggested regular

brushing in morning, wiping nose with clean cloth regular cleaning of hands and face.

Aristocrats used to wash their hand before taking food. A servant poured scented water on the hands, the water accumulated in an empty pot ; the washing continued till the hands were clean and scented after that hands were dried up with cloth.

In fact, the process of bathing became easier but still not regular. Aristocrats had their own bathrooms.

Check Your Progress :

What was the process of washing of hands of the aristocrats?

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In later period importance was given in the matter of cleaning clothes. The clothes were boiled in hot water and dried up, flower petals were spreaded over to make them with pleasant smell.

10.2.2 Modern Period

Discovery of germs by the French scientist Louis Pasteur in 1860 was an epoch making event. In the field of surgery there was a remarkable change in practice, use of uncleaned hands and instruments were stopped and arrangement for making them germfree was made. The patients were also kept clean. In fact up to the first half of nineteenth century doctors had no concept of germs. Pasteur put forward the idea of making substances germ-free using temperature, that is application of heat to make substance germfree. Milk was boiled at a certain temperature to make it germfree—the process is known as pasteurisation.

Gradually, quality paste was produced which stopped decay of teeth ; developed soaps washed clothes effectively and keep our skin clean and germfree; modern bath-room/toilets, were planned; the consciousness of health hygiene and sanitation had been increased. As a result with the aid of modern discovery we are proceeding towards a clean, germfree beautiful world.

10.3 Environment and Sanitation

By Sanitation generally we mean cleanliness. But from scientific point of view, it means a state free from germs. Sanitation can be viewed from three angles—

- Environment and Sanitation
- Home and Sanitation
- Food and Sanitation

In general environment means the natural elements—air, water and soil around us. A contaminated environment causes a great damage to our health.

10.3.1 Air

To ensure the conditions of healthy living at first we require a well ventilated house planned by expert where free clean air can enter and impure air can exit through doors and windows. As we require oxygen from air and exhale carbondioxide.

Air generally gets polluted in areas where factories are more, population in deuse and streets are crowded with petrol-diesel run vehicles. If appropriate measures are not taken, polluted air may bring diseases and cause damage to our skin and eyes.

Check Your Progress :

- . Why ventilation is necessary at home?

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10.3.2 Water

After air, water is our next requirement. Infact without water, we can not live more than three days. In rural area a man requires 50 lts of water and in urban area 130 lt. of water. By weight 70% of our body is water.

By Safe water we mean water—

- Free from germs of diseases
- Without harmful chemical elements
- Suitable for domestic work/use
- Clean transparent without any colour and unpleasant smell and taste
- With pH value 6.5 to 8.5

Water helps our body in many ways—

- Keeps density of blood normal
- Helps in digestion
- Helps to maintain right temperature of body
- Excretes unwanted things from body
- Dilute food for consumption and absorption

Check Your Progress :

How water is useful for our body?

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Contaminated water is the cause of 80% of the diseases we suffer from. It may cause diarrhoeae Cholera, Typhoid, Hepatitis A which may lead even to death.

It is generally said man can not live three minutes without air, three days without water and three weeks without food.

10.3.3 Home/House Sanitation

The house we live in should be kept perfectly clean free from smoke garbage and germs.

10.3.4 Food and Sanitation

Contaminated rotten, stale (not fresh) food contains germs of many diseases like cholera, diarrhoeae, hepatitis A etc. Hence intake of such food should be avoided.

10.4 Disposal of waste product

Problem is created if the items which are no more useable be not disposed at proper place.

The waste products can be classified in to three groups

- Solid waste matter
- Liquid waste matter
- Gaseous waste matter

10.4.1 Solid waste product

Rubbish : Paper, plastic, wood, glass, rubber, brick and other building materials etc.

Dead Body : If dead bodies of animal are not treated accordingly it creates pollution.

Ashes : Ashes from burning of wood, coal and other fuels, chimney ashes containing lead, mercurry, zinc, arsenic, cadmium etc.

Daily waste (House & Streets) : Unused food, vegetables, fish, meat, paper, and other house hold useless articles.

10.4.2 Liquid waste product

Water is cantaminated in many ways—inorganic fertilizer dissolved in rain water mix with water of pond, river etc; waste of factories like acid, salt, chlorine, mercury, lead mix with river, daily domestic and local waste and excreted substance of animal (300-400 gm in case of man) mix with water.

Check Your Progress :

How water sources are contaminated ?

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10.4.3 Gaseous waste product

Various gaseous products, like smoke of factories domestic fuel, transports, thermal power plants mix with the air to pollute it.

Check Your Progress :

Name some gaseous waste products

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Processing of waste matter

Waste products again may be classified into two groups decomposable and not decomposable.

Animal decomposable products can be converted to humus—a type of compost fertilizer and can be used in agriculture.

To avoid contamination of water by the industry treatment plant can be established. Fly ash can be used for preparation of bricks, waste wood and free product can be used for preparation of paper. To get rid of pollution, some waste products are burnt some recycled for further use.

10.5 Transmission of Communicable Diseases

Diseases are of two types—non communicable and communicable. Measles whooping cough, chicken pox, mumps, influenza, malaria, cholera, T.B etc. are communicable diseases. Again various skin diseases, like—ring worm, scabies, skin irritation, eczema etc. are also communicable. All these communicable diseases are caused by some germs which enter and multiplied in our bodies through some agents.

10.5.1 Classification of Communicable Diseases

- **Bacteria**—T.B.; cholera, leprosy, diphtheria, plague, dysentery, infection of skin, urinary bladder, respiratory organ etc.
- **Virus**—Small pox, chicken pox, measles, influenza polio, hepatitis, dengue, mumps, eye-infection etc.
- **Fungus**—Ring worm, irritation of skin sore caused by excessive use of water etc.
- **Parasite**—Malaria, kala-azar, worm etc.
- **Protozoa**—Dysentery, amoebic hepatitis
- **Metabolic**—Diabetes

Agent—Generally each communicable disease is spread by specific agent/agents, like malaria by mosquitoes, Plague by rats, AIDS by more than one agent.

Check Your Progress :

Name some diseases caused by virus?

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10.5.2 Agents of Communicable Diseases

Type of Agent	Related Diseases
Virus	Influenza(Flue), polio, small pox, chicken pox, hepatitis, herpes, AID, hydrophobia, mumps, measles
Bacteria	Diphtheria, whooping cough, T.B, typhoid, Infection of eyes, throat and ears, typhoid, Acute diarrhoeae Cholera
Fungi	Infection of skin and face
Protozoa	Amoebic dysentery
Parasite	Hook worm, Tape worm, Round worm (metazoal parasites) filariases
Ectoparasites	Scabies, Infection due to lice
Rickettsiae	Fever (trench fever, tick fever) Typhoid

10.5.3 How communicable diseases spread?

Air borne	Food borne	Water borne	Arthropod borne
Measles	Diarrhoeae	Diarrhoeae	Malaria
T.B.	Dysentery	Cholera	Filariasis
Leprosy	Cholera	Typhoid	Yellow fever
Whooping cough	Typhoid	Polio	Dengue
Diphtheria		Hepatitis	Fever Kala-azar

In India, 105 million children die every year before 5 years of age due to some water and food borne diseases, like Diarrhoeae, Dysentery and Cholera

10.5.4 Diarrhoeae

This disease is mainly water borne.

10.5.5 Dysentery

This disease causes severe pain in lower portion of belly accompanied with frequent stool without or with blood.

10.5.6 Cholera

It is also a water borne disease, germ *Vibrio Cholerae* causes such disease with symptoms like—loose stool, light headache, anxiety, thirst, drying of skin, muscle cramp, dehydration etc.

Dehydration is the main symptom of the three diseases mentioned above, hence treatment of dehydration should be made first.

Preventive measures are personal and environment cleanliness and observation at the rules of hygiene

10.5.7 Typhoid

It is a communicable disease. Main symptoms are high fever, severe headache vomiting tendency gradual physical & mental weakness, pain in hands and legs, fever without sweating. Cause : name of the bacteria *Salmonella typhi/typhosa*

Check Your Progress :

What are the symptoms of Cholera?

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10.5.8 Hepatitis Communicable Disease

Hepatitis A,B. and non A non B virus liver is attacked ; gradually its function deteriorates. Symptoms : Fever/Jaundice/Loss of appetite/ pain in below belly

10.5.9 Malaria

Agent : Female *Anopheles* mosquito-when such mosquito stings a patient suffering from malaria and then sting a normal healthy person the germs enter into body causing malaria

Germ : Malaria *Plasmodium*

Symptoms :

- Frequent fever some times with rigour
- Enlargement of liver
- Enlargement of Pancreas
- Headache
- Feeling of being cold
- Vomiting tendency
- Excessive thirst

Remedies :

- Blood test
- Use of DDT and other spray over stagnant water
- Use of powder to destroy eggs of mosquitos
- Cleaning drain and stagnant water
- Use of quinine or its equivalent
- Use of mosquito net
- Consultation with doctors

10.5.10 Influenza

Germ : Orthomyxo

Virus air bone and communicable disease.

Agent : Germs spread through air-when affected person sneezes or coughs germs enter into others body.

Symtoms : Fever, pain all over body, cough, sneezing, strong headache, infection at respiratory organ, weakness.

Treatment : separation of the patient from others. Consultation with doctor and use of medicines.

Check Your Progress :

What are the symptoms of influenza?

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10.5.11 Common Cold

Germs : Staphylococcus; streptococcus, pneumococcus.

Causes : Change of weather, fluctuation of temperature, coming in contact with affected person, drenching in rain.

Symptoms :

- Cough, watering nose
- Face and eyes turn red
- Bodyache
- Sneezing cough
- Infection at throat, nose
- Throat pain
- Fever
- Closed nose

10.5.12 Cough

It is not a disease but its symptom

Germs : Staphylococcus, Streptococcus, Neumococcus

Symptoms :

- In case of cough continuing for long time, the tests of T.B. should be done, in such case cough is accompanied with chest pain.

- Asthma, infection at the respiratory system may also cause cough.

Remedies:

- Consultation with doctor is necessary as many complex diseases may be developed from cough.
- Avoiding strong sun, cold, irregular bath, rain
- Light, easily digestible food.
- Walking in free air.
- using Juice of 'Tulsi' leaf, 'Basak' leaf, honey

Check Your Progress :

What steps should be taken to get relief from cough?

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10.5.13 Conjunctivitis

It is a disease of eyes caused by germs called 'Conjunctivitis'.

Symptoms :

- Eyes turn red
- Eye lids turn heavy
- Watering eyes
- Irritation

It is a communicable disease and spreads while a person comes in contact with an affected person or his towel, handkerchief or cloths

Prevention :

- Avoid sun light and stay inside

- Use dark glasses
- Flushing eyes with clean water
- Don't come in contact with the affected person.

Check Your Progress :

How can you prevent conjunctivitis?

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10.6 Summary

Personal cleanliness is an essential condition of health. Proper care should be taken to clean eyes, ears, nose, hair, skin and to maintain oral health. i.e air soil and water. It is necessary to keep our natural environment free from pollution. A pollution free environment helps to build up a healthy society. In fact in the history of medicine French Scientist Pasteur's discovery of germs in an epoch making event. It is necessary that people be aware of the diseases related to virus and bacteria. We all know that prevention is better than cure and it has been proven that modification of life style is the best way of preventing common diseases.

10.7 Exercise

Essay type question

1. What is meant by personal cleanliness? How care of eyes and teeth can be taken?
2. What is meant by health? How environment can be kept neat and clean?
3. What do you mean by communicable disease? Name two such diseases. How these diseases spread? Mention the ways of their prevention.:

4. What do you mean by waste ? mention different steps of disposal of waste products.

Short answer type question

1. How will you take care of your hair? What problems may be faced if proper care of hair is not taken.
2. What is the function of ear? How it can be damaged?
3. Why the year 1860 is famous for in the history of medicinal science.
4. 'Water is life'—What does it mean? How water is contaminated?
5. What do you mean by communicable disease? Name some of the communicable diseases; Discuss the cause and Treatment of two such diseases.

Short answer type question

1. How skin serves our body?
2. What do you mean by spongy gum?
3. Which limb of the human body is called 'window of learning'?
4. Which is called 'Dolia Kurta'?
5. How hygiene of home can be maintained?
6. Give two examples how waste product is recycled and reused?
7. What are the symptoms of Cholera?
8. How Conjunctivitis is spreaded?

Unit 11 □ Child and Security

Structure

11.0 Objectives

11.1 Introduction

11.2 Concept

11.3 Accident and its Prevention

11.4 Need of awareness about security

11.5 First aid

11.6 Sun Stroke

11.7 Drowning

11.8 Burns

11.9 Snake bites

11.10 Role of Mother and Teacher

11.10.1 Role of mother

11.10.2 What should be done if accident takes place at home

11.11 Role of teachers

11.12 Summary

11.13 Exercises

11.14 Bibliography

11.0 Objective

After studying this unit a learner will be able to know, understand and write about the following topics.

- Acquire a concept of security.
- Understand why the knowledge of security is needed
- Know about the accidents generally faced by child

- Know about the prevention in order to remain protected from such accidents.
- Acquire a concept of first aid.
- Be familiar with the first aid equipment, at home and school.
- Be aware of the responsibility of home and school in facing minor accidents.

11.1 Introduction

The main aim of imparting security education is to protect human life from accidents which may occur for many reasons, like-water, fire medicine, electricity, sharp instruments play movement at street etc. Before doctor's arrival theoretical and practical knowledge of providing first aid in such cases save human life and reduce suffering.

11.2 Concept

Spencer, in his educational ideas first mentioned the necessity of imparting security education for child. Such education is need based, as with the progress of civilization the probability of accidents is increasing. We want to safe guard child's life and want to save him from being injured. Hence child should have the knowledge of self protection and related training. This will protect him on the street, in his home, in playground, in school etc.

Check Your Progress :

What do you mean by security education?

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It will be more helpful and effective if we provide security education at an early age. Population is ever increasing, streets are crowdy, more use of electric and electronic gadget is making our lives complex and accident prone. Under the situation considering present need it is necessary to impart security education.

Check Your Progress :

What do you mean by security education?

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11.3 Accident and Prevention

Accidents occur at all places of the world even at our sweet home.

- (i) Children are fond of bright light this causes accidents related to fire and electricity. Gas, electric heater, coal, match, kerosine and hot substances should be kept outside the reach of children.
- (ii) Electricity, cooking gas had caused so many accidents. Children should not be allowed to enter kitchen, switch board to be placed out of their reach

How electricity causes accidents?

- (iii) Children while playing on uneven playground, uncleaned ground may be hurted seriously. Care should be taken that no water accumulate on playground, pieees of broken glass should be removed.
- (iv) Accidents at street are frequent causing injury, sometimes even death. The rules of the streets to be followed, children should cross a road with the help of elders using zebra crossing. Level crossing in no case should be crossed while gates are closed.
- (v) The following objects should be kept outside the reach of children. Sharp objects like knife, pins, medicines, pesticides, washing powder, mushroom, broken toys, glass etc.

11.4 Need of awareness about security

This education not only helps us to avoid situations of danger but helps us to build up courage to face such situation patiently, remaining calm.

This education is useful for the following reasons—

- (i) Causes of accidents can be realised
- (ii) Provide information to face sudden accidents
- (iii) Security rules at different places (home, playground school, streets etc.) are intimated.
- (iv) Aware us about the danger of fire works (Baji) during festival days

Check Your Progress :

Why security education is needed, give two reasons

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- (v) Danger in most cases comes to our lives suddenly, a knowledge about such accident helps us to tackle the situation.
- (vi) It tells us that different waste product (like banana skin, broken glass chemicals) which create accidents should be preserved in particular places.
- (vii) It provides us the knowledge and practical experience of first aid.
- (viii) Informations regarding safe travel by train/bus/car/ are provided.
- (ix) While on tour at different places, like hills, sea-river this education supplies us with necessary information.

Check Your Progress :

While you are on transport what precautions should be taken?

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11.5 First Aid

Human beings at any situation at any time may face different natural calamities like earth tremor cyclone and various accidents. In such situations mostly medical assistances like doctor attendance ambulance etc. are not available. Here is the necessity of first aid which may save human life.

11.5.1 Objectives of First Aid

- (a) Saving life
 - To stop excessive bleeding
 - To start functioning of heart
 - to start respiration
 - To provide security of life
- (b) Overcoming Serious Situations?

To provide primary treatment in case of severe diseases to provide primary treatment in case of serious accident, to determine the nature of wound and illness.

- (c) General Nursing
 - To give relief from pain and uneasiness
 - Making arrangement for treatment

11.5.2 General Nursing

- (i) Diagnosis

- (ii) Nursing
- (iii) Cure

Diagnosis : At this phase the symptoms are studied and on the basis of previous knowledge the nature of difficulty (disease) is located.

While studying symptoms it is to be noted whether the patient is feeling hot or cold, thirsty, pain. In this context if possible the history of the patient is to be taken into account.

Symptoms : With these informations (physical, mental) are collected about the patient like—feeling cold or hot, thirsty, severe pain location and nature of pain, the degree of consciousness etc.

11.5.3 Treatment

Before treatment, the whole situation and the symptom should be taken into account

- (i) In case of injury on head, the place and nature of injury to be located.
- (ii) In case of ear injury the degree can be determined by speaking loudly near ear.
- (iii) In case of eyes injury special care should be taken
- (iv) The rate and nature of respiration to be noted
- (v) Clothes around neck should be loosened
massaging spinal chord from neck of waist if required.
- (vi) Observation of the colour of face, lips, ears
- (vii) Recording temperature of the body
- (viii) Observation of the nervous system of the patient, care should be taken until arrangements are made to shift the patient to nearest hospital by ambulance or any car.

11.5.4 Street Accidents

First thing to be observed is that whether the patient is conscious or unconscious. If he does not respond his arm can be jerked lightly. In case of unconsciousness his head can be kept slowly upper to note the inside of the mouth, to locate injury inside if there be any. If necessary to stop bleeding care should be taken.

Specially the function of the respiration system to be noted—the rate of respiration, the position of chest, pulse rate, artificially. If required oxygen can be supplied by mouth

to mouth respiratory system. Primarily the respiratory system indicates whether patient's heart is working normally. The pulse rate is also an indicator of the system.

Check Your Progress :

How can you understand that heart is working properly?

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11.6 Sun Stroke

Strong sunshine, excess temperature and humidity may cause sun stroke. In such cases, sweating stops and there is a remarkable differences of temperature in between body and the external?

Symptoms :

- Strong headache
- Face and eyes turn red
- loss of consciousness
- Increase the body temperature

Treatment :

- At first the patient should be brought to a cold place
- Patients clothes should be removed and water be poured on patients body
- Patients temperature should be recorded every ten minutes and when the body temp starts receding he should wear dry clothes again but the fanning will be continued.
- Patient should be provided with sufficient water to quench his thirst
- Doctor's advice should be followed

Check Your Progress :

How ill you treat a sun stroke patient?

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11.7 Drowning

Drowning in pond, river, sea is a general matter. It happens when there is lack of caution or a person does not know how to swim or wants to commit suicide.

Symptoms :

- Patients lungs and liver are filled up with water.
- This hinders the respiration process.
- Gradually the patient becomes senseless and pulse beats sink.
- Patients tongue, nails, lips turn bluish.

Treatment :

- first the patient to be dragged out of water and placed on ground upside down
- Dress should be made loose.
- Pressure be applied on back side in order to out the water inside belly.
- Patients body may be held upside down so that water can come out from inside of the patient's belly.
- If mud stuck to patient's nose and mouth it should be cleaned.
- Whole body of the patient should be covered with blanket or thick clothes as a result the body.

11.8 Burns

Burns occur due to many reasons in daily life, when our skin come in contact of fire, hot metallic substance, acid, electric shock, hot water, rice, oil, tea or coffe, milk etc. cases of burn take place.

Symptoms :

- Severe pain and burning sesation
- The upper surface of skin turns red.
- In case of serious extensive burn patient may be unconscious.

Treatment :

- With blanket or any thick bed sheets person body can be covered to put off fire of cloth.
- If nobody is there to help or no substance is available to put off fire, person can move to open area roll on the ground and try to put off fire.
- Cold clean water can be poured on burnt portion sufficiently which will reduce the burning sensation.
- No attempt should be made to remove burnt cloths from body immediately to avoid damage of skin.
- The burnt portion after cleaning can be covered lightly with bandage or clean white cloth.
- Burnol can be applied on burnt skin as medicine
- Doctor should be consulted immediately specially if the case is a serious one.

Check Your Progress :

What medicine should be applied on the burnt portion of skin?

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11.9 Snake Bites

All snake bites are not deadly although common people are afraid of snake and snake bites.

The name of four common posionous snake can be mentioned.

- (i) Gokura
- (ii) Cobra
- (iii) Russets Viper
- (iv) Saw Scaled Viper

Symptoms :

- There is a remarkable difference in the nature of bite of a posionous and a non posionous snake.
- In case of a bite by a posionous snake generally two different marks can be noticed.
- If the snake is not posionous bite impressions in two rows upper and lower can be observed.
- Patient feels severe pain and irritation at the place of bite.
- Wound starts bleeding
- Muscles start loosen and senseless specially muscles around eyes. Effects on nervous system can also be noticed.
- The skin colour around the spot of bite changes,
- Patient may feel dizziness, strong headache. respiratory trouble.
- May vomit or cough, sometimes with blood even the patient may die if necessary steps are not taken in time

Treatment :

- To reduce circulation of blood binding with piece of cloth should be there just above and below the spot of bite. The binding should not be very tight and it should be loosen every half an hour. Immediately doctor should be consulted.

- The place bite can be pierced slightly with very sharp knife or blade to allow blood with poison to come out.
- Ice can be applied slowly over the muscles surrounding the musk of bite.

Check Your Progress :

In case of snake bite how binding should be provided?

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- Anti tetanus vaccine should be injected.
- If required arrangement for artificial breathing to be made.
- If heart stops functioning necessary massage is required to keep it working.

Check Your Progress :

What should be done to prevent Tetanus?

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11.10 Role of Mother and Teacher

Children are easy prey of accidents which bring injury, even death also. Such a consequence is the most tragic event in life of parents. Nearly half of the accidents take place in home-children fall from high place, or from staircase,, get burn and suffer from food poisoning. A large number of children face street accidents and either injured or dead. Such accidents can be reduced if parents and teacher themselves are aware of that and make children alert at house and school.

11.10.1 Role of mother

- It is mother's primary responsibility to save child at home and outside.
- Child should not be allowed to play with broken toys or toys with sharp open ends.
- Medicines should be kept in separate box, out of reach of child.
- Match sharp items, electric gadgets, electric switch board, to be kept out of reach of child.
- Child to be protected from other animals.
- Fire extinguisher to be placed in a safe place
- While riding motor seat belt to be tied and helmet to be used on motor cycle ride.
- The meaning of traffic signal to be understood and the traffic rules to be followed.
- Pond or other water source to be guarded properly.

11.10.2 What should be done if accident takes place at home

- Doctor should be intimated immediately.
 - Before arrival of doctor first aid treatment to be provided to injured, ill patient.
1. In case of minor injury/cut, the spot to be cleaned, antiseptic ointment can be applied over it and finally it can be covered with bandage.
 2. In case of major injury/cut, bleeding should be stopped first. The wound to be covered by bandage before sending the patient to a doctor.
 3. In case of a burn, profuse water should be poured on the spot after applying ointment and covering the spot with clean light cloth-patient can be referred to a doctor.
 4. In case of a bee-sting first the sting to be removed then necessary treatment can be given.
 5. In case of fracture of hand/leg the limb to be tied up straight and doctor's advice to be followed.
 6. In case of a snake bite (poisonous snake) two bindings over and below the spot to be given and doctor should be consulted immediately.

Check Your Progress :

What should be done if a bee stings?

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11.11 Role of Teacher

Security programme in school.

- Arranging a seminar on security
- Popular lecture on the topic
- Displaying poster, bulletin on the issue
- Publication of wall magazine, magazine bulletin on security.
- At library providing facility to read reference book, see picture on security education.
- Cinema show (documentary film) on security.
- Farmation of body with the students who will propagte the ideas through social service and raise the consciousness level

Theoretical knowledge is not sufficient we require to build up safety habits and consciousness among students

11.12 Summary

Education aims for allround development of a child. In childhood, child should be protected from various accidents also. We have to make the environment safe for the children which will reduce the probability of accidents. At the same time, right habit to be formed. Parents and teacher may play an important role in this regard. Theoretical and practical knowledge of first aid may help child to a great extent to manage situation at home

or outside it. School can take up specific programme on the issue and raise the consciousness of children.

11.13 Exercise

Essay Type Question

- 1.. What is meant by education for security? why such education is necessary?
2. In general what accidents occur at home? How they can be prevented?
3. What is first aid? What is the aim of providing first aid?
4. What accidents generally occur in schools? How first aid can be provided in school?

Short Answer Type Question

1. Why security education is imparted at an early age?
2. What are the accidents related to electricity?
3. How medicine can be the cause of our death?
4. What precautions should be taken while moving at streets
5. After first aid what precautions should be taken?
6. What are the symptoms of snake bite? What first aid treatment should be provided for such cases?

Very short answer type question

1. What is the need of security education?
2. What is an accident?
3. While crossing a street what should be kept in mind?
4. What type of accidents are generally faced while travelling?
5. Mention first aids for burns.

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Paper-III

Paper 3A : Exercises of Practical Life

Contents

House of children

Unit 1 : Developmental Activities

- (i) Mat Rolling**
- (ii) Chowki and Chair**
- (iii) Pouring (Solid and Liquid)**

Unit 2 : Social Behaviour

- (i) Offering Activity**
- (ii) How to walk in line**

Unit 3 : Taking Care of Environment

- (i) How to Sweep**
- (ii) Dusting**

Unit 4 : Taking Care of Ourself

- (i) Folding Napkins**
- (ii) Using Frames**
 - (a) Press Button**
 - (b) Coat Button**
 - (c) Shoe Lace**
 - (d) Ribbon**

“House of Children”

Responsibilities of Adults towards the preparation of environment and tools in a house of children :—

At the age of $2\frac{1}{2}$ years ; a child needs a 3rd environment, apart from a family & Social environment, which he enters from his birth.

According to Dr. Maria Montessori, a human being is born twice. His first birth takes place when he enters in this world, his second birth takes place when he $2\frac{1}{2}$ years old.

Because at that time psychical components begin to grow. At this time a child is called upon to some activity for his development by nature. He is called upon to do some conquests for which he needs something which his family or society cannot supply.

He starts needing more space for his movement, some tools for his activity which he is called upon to do by nature and a community of the same who may help him and whom he may help.

For all these things he needs a 3rd environment which can provide him with greater space, some special tools as a community which no home or society cannot serve.

To become conscious of his achievement and to consolidate and develop them, child needs 3rd environment i.e., “House of Children.”

Preparation of the environment in a proper way. We should prepare the environment in such a way that a child can carry out his activities of practical life freely. The environment should provide a space and scope.

Our responsibilities in preparing the materials :—

We will have to prepare the material in such a manner so that it can satisfy the needs of the child.

In preparing the tools, we will have to keep in mind some points :—

(a) Our responsibilities in preparing the tools,

(b) To maintain the tools,

(c) Developing the tools with developing child,

(d) **Physical proportionateness** : Which determines whether the child can handle them physically (reach, lift, move, etc.) and therefore purposefully. It considers his physical capacities. Tools should be small & light.

(e) **Psychical proportionateness** : Which refers to the intelligence. The functional purpose of the tools should be comprehensible at first glance. Unnecessary complication, its fancy shapes & ‘disguises’ should be avoided. The tools should be ‘straight’ and forward.

(f) **Local Character** : Locally used tools should be used. The outer appearance of the tools ; time to time. The tools should be such that, a child can see it in his home environment and in the ‘House of Children.’

(g) Attractiveness : Tools should be attractive. This outer attraction discover the inner attraction.

But the tools are not so beautiful. because the child are not use this they habitate to use it. So for the attraction is within limit of necessary & sufficient. So decoration must be attractive & intellegently.

(h) There should be independent set of material so that the child does not have to share it with other.

(i) Multiple set of material : In a 'House of children' there need multiple set of material because after collective presentation, some children needs to perform the activity individually. Also a child should not wait long time for a material to perform the activity.

If there have varity in the set in colour & shapes ; it also stimulate the power of repetation of the child.

Presentation of an activity in a House of Children :

Presentation of an activity is must in a 'House of Children' A child cannot do an activity perfectly unless we demonstrate the activity to him. Our presentation helps the child to help an image of perfection and understand the meaning of the activity and helps the child to control his error. It helps the child to choose his activity and thus helps him to be independent. Presentation should be as breif as possible. We demonstrate an exact and preciese technique of handling the material and of performing the activity. The preciseness and exactness of an activity attracts the child to do the activities.

There are three types of presentation :

1. Individual Presentation.
2. Group Presentation.
3. Collective Presentation.

Individual Presentation : Offer the presentation only one child is called individual presentation.

Group Presentation : Offer the presentation to the child more than one but not the majority of the community.

Collective Presentation : To offer presentation to all children, accepted by most of them or by majority of the children.

In a 'House of children', there are 30 to 35 children in a community. All are 2.5 year to 3 years of age. Which forms of presentation is to be adopted depends upon the needs of the children. In a House of Children we start with collective presentation, which forms

of presentation is to be given also depends upon the nature of movements involved in the activity.

How we decide the form of the presentation adopt :—

1. Needs of Children : (a) The needs of the children is the first point on the basis of observation. If under observation we conclude that majority of the children needs presentation, then we offer collective presentation.

(b) if the presentation is need for a group of child or few child, then we offer group presentation.

(c) If all the children of the community are doing same things & one particular child does not do this & cannot understand what to do, then we give a presentation for that particular child. This presentation is called Individual presentation.

There are so many ways that individual child needs, individual presentation. If a child do something, but it is not perfect, stay some mistakes on its work, then we give individual presentation again to that child to perfect working.

2. Nature of Movement involve in the activity :—

We also have to take into consideration the nature of actions, movements, involved in the activity.

In an activity, involved movements, which is large and as such which can be followed, understand by the children sitting some distance from us, then the activity can be presented by collective presentation,

e.g. How to role a mat ? Put down a chair.

In some activity, involving movement which can be observe by more than one and not many, then the presentation can be offered as group presentation.

In some activity, where involved actions which are so minute, so mini, we cannot except more than one child to understand, in such cases we offer individual presentation.

Same activity which child are not clearly to follow. Which hand are first to perform the activity, then we give again individual presentation.

When there is one set of material, then we give individual presentation.

3. Nature of the activity to be presented :—

In a 'House of Children', there are three types of activity :—

(i) Individual Activity : Most of the developmental activities are individual acvitivity. i.e. One child can perform individually in itself, anybody not co-operate with him.

(ii) Group Activity : The activity, which cannot be done individual ; the acitivity done as group or collective it is group activity. e.g. Carry a large furniture.

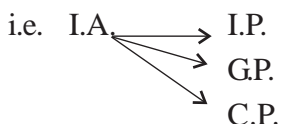
(iii) Collective activity : Collective activity cannot be perform if each of one of child can't be join. e.g. 'Silence activity' if the silence can't be perform.

4. Number of sets of material :—

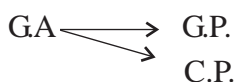
On the basis of the number of sets of materials we consider wheather we give collective, or group or individual presentation.

If there are 10 to 12 sets of material, than we can give collective presentation. If there are 3 to 4 sets of materials, then we give Group presentation. If there is only one set of material, then we give individual presentation.

Now in case individual activity it can be present either individual presentation, Group presentation & Collective presentation.



if there is a group activity. there are give— group presentation and collective presentation.



If it is collective activity, them we give only collective presentation.

i.e. C.A. → C.P.

(i)	I.A.	I.P.
	G.A.	G.P.
	C.A.	C.P.
(ii)	I.P.	I.A.
	G.P.	G.A.
	C.P.	C.A.

Unit 1 □ Developmental Activities

The child, in course of his self-formation, needs certain activities which are indispensable to him, for his development. These activities are called developmental activities. Human being is learn with human potentiality. He makes it actual which is potential. Without development activities actualisation of human potentiality is not possible.

The child performs its activities according to a timetable of nature. So we know, when the child needs the proper activities, what conditions, a child needs to perform his actual activities and how we can recognise them.

The first characteristics is to recognise development activity, a really true developmental activity attracts a child spontaneously, irresistibly, and creates in him a “spontaneous interest.”

The second characteristic is child spontaneously chooses to perform that activity while enjoying full freedom of choice.

Thirdly child is striving for perfection; he notice imperfection and repeat it spontaneously till he attains perfection.

The child has interested in developmental activity with the ‘tools’ because he sees these tools used in home. So the love for the tools fascinates him to perform the activity.

Direct Aim of Exercise of Practical Life (E.P.L)

To help the child to grow independent with the performance of

- (a) Elementary movements.
- (b) Taking care of one’s environment.
- (c) Taking care of self
- (d) Taking care of social behaviour.

Indirect Aim :

To help the child to consolidate his co-ordination between intelligence, will and motor and lay a strong foundation of integrated personality.

“Mat-Rolling”

Material Description :

On some of the working mats we have two indication lines at third distance, from both edges, along the two longer sides of the mat.

This two lines should be visible on both sides of the mat. We may show this lines using paints, tape or ribbon.

● How to roll a mat?

Presentation :

(Individual Activity— collective presentation; Group presentation; Individual presentation)

When the children have settle down go to the place where the rolled mats are kept. Bring rolled mat carrying it properly without analysing your movement and place it at the place of presentation and unrolled it without analysing your movement.

Sit on your haunches in front of the shorter side of the mat which is away from the children. Insert the thumb of any hand under the mat at the third distance from that side and place the fingers of the same hand on top of the mat. Repeat the same movement with the other hand at the third distance from that side.

Slightly up the edge of the mat, turn it and bring it down. See that the first fold is not too tight or too loose.

- (1) Take out the fingers of the hand used first and put them next to its thumb. Release the same thumb and insert it under the fold.
- (2) Repeat the same movements with the other hand.
- (3) Now roll the rolled part covered with the help of thumb. Then repeat the movement of (1) and (2), keep the moving forward on your haunches as you roll the mat. Keeping inspecting both sides are even. Continue the movements of (1), (2) and (3) till the entire mat is rolled with the open edge on the top of the rolled mat facing you.

● Point of interest

- (1) The first fold should not be too tight or too loose.
- (2) Keep inspecting the evenness of both ends of the rolled mat.
- (3) Keep moving forward on your haunches as you rolled the mat. Never drag the mat.

Control of error :

- (1) Both edges of the rolled mat should be flat and even.
- (2) The rolled mat should be compact.
- (3) The open edge should be on top and facing towards you.

● How to unrolled a Mat?

Presentation :

(Individual Activity-collective presentation; Group presentation; Individual presentation)

Bring a rolled mat to the place of presentation. When putting it down make sure that there is enough space behind you unrolled it also make sure that the open edge is on top facing you.

Sit on your haunches in front of the rolled mat. Insert the thumb of any hand under the open edge at one-third distance from that side and place the fingers on top. Repeat the same movement with the other hand at one-third distance from that side. Lift the open edge; put it on the floor. Release the thumb and then the fingers of the hand placed first and then those of the other hand.

Now insert the fingers of the hand used first under the farthest side of the rolled mat at one-third distance from that side and place the thumb on top. Do the same with other fingers and thumb.

Bring the rolled mat towards you with the help of the fingers. Bring the thumb of the hand use first next to the same fingers, and then insert the fingers under the roll. Repeat the movements with the other hand and go on the unrolling the mat, moving backwards on your haunches as you do so. Continue the same movement till the entire mat is unrolled.

● **Point of Interest**

Keep moving backwards as you unrolled the mat.

Control of error

The unrolled mat should be flat without any wrinkles.

● **How to pick-up a rolled mat?**

Presentation : (I.A – I.P)

Have a rolled mat at the place of presentation, kept vertically or obliquely towards the children.

Sit on your haunches in front the rolled mat facing slightly towards the children.

Inset the finger of the hand which is away from the children at one third distance and place the thumb on top. See that the open edge is under the thumb.

Repeat the same movement with other hand.

Lift the mat vertically, keeping it in a horizontal position. Lift it to a convenient height (around waist level) so that you can keep an eye on the object and also see where you are going.

Repeat the activity from different angles. So that all children can see the activity clearly.

● **Point of interest :**

Seeing that the open-edge is under your thumb.

Control of error :

- (1) The position of the mat should be horizontal.
- (2) No part of the mat is hanging down.

● How to sit on a Mat?**Presentation : (I.A. – I.P, G.P. collective presentation)**

Have an unrolled mat or sitting mat at the place of presentation. Stand at any one side of the mat away from the children, lower yourself and place one hand nearer to the mat on it. Sit partly on the mat. Bring the leg nearer to the mat on it (Let the children see you do this). Putting the other leg on the mat and sit cross legged or place it by the side of first one. If possible arrange your clothes so that they are on the mat only.

● Point of Interest :

- (1) Taking support with one hand.
- (2) One leg at a time.

Control of error :

- (1) Not to step on the mat.
- (2) Your clothes with you.

● How to Get-up from the Mat?**Presentation :****(I.A. – Collective Presentation, Group Presentation; Individual Presentation)**

Sit on the mat as usual. Place outside the mat, the foot of the leg which was crossed over the other one. Stretch the other leg till its foot is also outside the mat by the side of the first one. Support yourself with the opposite hand and get-up, smoothing your clothes.

● Point of Interest :

- (1) Taking support with one hand.
- (2) One leg at time.

Control of error :

Not to step on the mat.

Chowki and Chair

● How to put down a chowki or a chair ?

Presentation : (I.A. — Collective; Group and Individual Presentation)

Have a child's chair at the place of presentation. Stand in front of the children and see that the back rest of the chair facing you. Lift it correctly without analysing the movement. Ask the children to listen, bring the chowki towards the floor. First put one of the legs away from the children, on the floor, at a slightly exaggerated angle, then the other leg away from the children had the same side. Then the remaining legs are place down together. Now ask the children whether he heard any noise.

Repeat the presentation. This time asking the child to watch how we try and put down a chair or chowki without making any noise. Each time finish the activity, ask the children whether they heard any noise.

● Point of Interest :

- (1) Seeing that back-rest of the chair is facing you.
- (2) Placing the two legs down one at a time.

Control of error :

Absence of noise.

● How to lift a chowki on chair ?

Presentation : (I.A. – Individual; Group; Collective Presentation)

Have a chowki at the place of presentation. Insert the fingers of one hand under the surface of the chowki or table, at the middle of that side and place its thumb on top. Do the same of the other hand. Lift the table or chowki vertically, keeping the surface horizontally.

● Control of error :

Keeping the sit horizontally.

● How to carry a chowki o chair ?

Presentation : (I.A – Collective; Group; Individual Presentation)

Bring the chowki or child's chair at the place of presentation. Now decide where you are going to take it. Lift the chowki or the chair as usual. Support the front edge against your body if necessary. Carry it in a horizontal position.

Control of error :

- (1) Keep the surface horizontally.
- (2) Not to be knocked against anybody or any object.

● How to sit on a chair?**Presentation : (I.A – Collective; Group; Individual Presentation)**

Have a child's chair at the place of presentation. Place it obliquely and see the back rest is facing the children. Stand in front of the chair. Close to it but without touching it. Hold the corners of the seat with both hands, lower yourself directly to the seat of the chair and sit down. Show the children that with one hand you hold the chair and with other hand you smoothen your clothes. Your back straight, your feet flat on the floor in front of you, your hand resting on your lap, your cloth with you.

Repeat the activity from different angles for all children to see it clearly.

● Point of Interest :

Taking support with your hands on a chair.

Control of error :

Absence of Noise.

● How to get-up from a chair ?**Presentation :**

Take support on both sides of the seat with your hands and lift yourself bending slightly forward. Smoothen your clothes and stand upright.

Control of error :

Absence of Noise.

● Name of the activity—POURING GRAINS.**Material Description :**

A Tray, the base of which is covered with oil-cloth, on which we find three to five small glasses or mugs and a small jug. The glasses are arranged diagonally from the left base corner to the right top corner. The Jug is at the right base corner. For the first presentation it is better to have a transparent set. The whole set should be of the same materials. The glasses have an indication mark at $\frac{3}{4}$ th from the base. This is outside the glass if it is transparent; and in a non-transparent set, it is only inside. The Jug also has the same indication mark just below the base of the spout.

The Jug when filled upto the mark with grains, should contain slightly more grain than needed to fill all the glasses upto the mark. In a “House of Children”, there should be 3 to 4 sets of material for this activity. (e.g. Lotas; ‘Katories’ can also be used).

Presentation : (I.A – Individual a small group presentation)

Ask the child to go and get an oil-cloth and unrolled it at the place of presentation.

Then show the children where the material is kept and bring it to the place of presentation. Place the tray to your right. Start taking glasses from the tray, from the left base corner. As you take the glass, draw the child’s attention to the indication mark.

Start placing the glasses from the right top-corner of the oil-cloth and continued till the glasses are in the same order as they were on the tray. If the child wants to arrange the glasses, place the tray between both of you and suggest that he arranges them just as they are on the tray, taking the glasses one by one. Take the jug, draw the child’s attention to the indication mark and place it at the right base corner. Before you lift the jug, to start pouring, draw the child’s attention to the indications on the glasses and tell him, “I am going to pour, this grains into these glasses upto the mark. When the grain reaches the mark, you tell me and I will stop.”

Pick-up the jug vertically, till it is slightly higher than the height of the glass and move it horizontally to the right top glass. When the tip of the spout of the jug is just over the middle of the glass, draw the child’s attention to it and then start to pour. When the glass is half filled, move the jug in circular movement while pouring. Stop when the child tells you, that the gains has reached the mark. If he does not do so; stop and remind him. Straighten the jug over the glass and move it to the 2nd glass.

Before filling this glass remember ask to tell the child, to tell me when to stop. Repeat the same movement, till all the glasses are filled and place the jug at right base corner. To repeat the activity, we empty the glasses by pouring the grains, back into the jug. Start with the right top glass, when the jug is half-filled, pour the grain with circular movement.

Continue till all the glasses, are empty. Then inspect the oil-cloth ad glasses to see that there are no grains any-where.

When transferring the materials back into the tray, first place the jug at the right base corner, take empty glass that left base corner and place it at the right top corner.

Continue till of all the glasses return.

● Point of Interest :

(1) Pouring upto indication mark.

(2) The circular movement, to ensure the level of grains being even.

Control of error :

Not a single grain on the oil-cloth.

● **Pouring of Liquid**

Material Description :

For the activity the material is the same as that for pouring of grain but there are minor changes.

On the tray along with 3 to 5 glasses set in the same oblique position, the jug at the right base corner, we also have a small (10×10 cm) cotton cloth with an embroidery jar or glasses.

This is kept fold it at the left top corner. The jug is filled with water just more than needed to fill the glasses. There should be several sets of these material in as much of a variety as possible (as in pouring grain).

Presentation (I.A – I.P) :

Presented on a chowki. Bring an oil-cloth and unroll it at the place of presentation. The presentation follows the sequence and pattern of pouring grain with the following changes.

When removing the items from the tray, take the cotton cloth first, unfold it and place it at left top corner of the oil-cloth.

When the child tells you that the liquid reaches the indication mark, strengthen the jug over the glass, and from base to the spout wiping the jug, keep the cotton cloth back at its place. When you have finished pouring into all the glasses, put down the jug and pour the water back from the glasses into the jug. But in this case, wait for the last drop to fall from each glass before putting the glass down. Wipe each glass after pouring. After finishing lift the glasses and the jug to see if any water is spilt and if there is any, wipe it with the cloth.

● **Point of Interest :**

Pouring until the liquid reaches the indication mark and waiting for the last drop of water to fall out of the glasses.

Control of error :

No drops to be found on the oil-cloth.

Unit 2 □ Social Behaviour

Greetings are offered first in the manner which is usual according to the custom of the society to which the child belongs. Later on we can show the children, the different ways of greeting in different parts of India. Still later, we show the children, how people greet each other in different parts of the world. While showing how to greet, there should be somebody, who can help us to show the children, how to respond to a greeting.

● How to say “Namaste” ?

Bring the right hand to the middle of your chest, then bring the other hand next to it. Show the children how we join all the fingers of one hand to those of the other. Starting with the thumb; keep all the pairs of fingers together and bend the head and upper body slightly forward and say “NAMASTE”.

If the person is one from whom, we have great respect, first touch the hand to our forehead, then bring them to the chest and bending slightly, say, “NAMASTE”.

Point of interest :

Joining of the fingers.

● How to talk in Society ?

Presentation : (I.A – I.P Collection and Group presentation)

When you want to talk to someone go to the person and wait until the person’s attention is drawn to you. When talking to someone always look into their eyes (eye contact is an important part of communication). You talk in a pleasant voice, so that you cannot be heard by any one else in the room. You speak clearly so that the person to whom you are talking can understand what you are saying.

Control of error :

When you talk with the person you do not disturb nor attract the attention of others around you.

● How to Sneeze?

Presentation : (I.A. – C.P., I.P., G.P.)

If you cannot control a sneeze, take a handkerchief, open it, cover your nose and mouth, turn away from those around you and sneeze. If you cannot turn away from those around you, then bend your head, try and suppress all noises as much as possible.

Control of error :

As little noise as possible.

● How to YAWN?

Presentation : (I.A. – C.P., G.P., I.P.)

If you cannot control Yawn, cover your nose and mouth, with your hand as handkerchief, turn away those around you and Yawn without making any noise.

Control of error :

Absence of Noise.

● How to Cough?

Presentation :

Cover the mouth with a handkerchief in your hand and, turning away from anyone in the environment, cough, making as little noise as possible.

Control of error :

Try to make as little noise as possible.

Offering Activity

Introduction

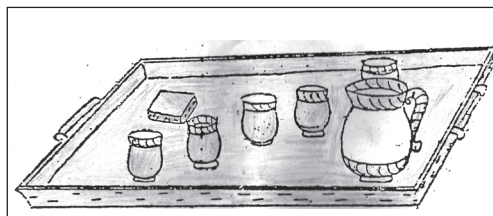
These activities of how to offer things are part of social behaviour activities. They help the children to response to the social requirement of the world in which he lives. When presenting such activities to the children, we need someone else to do the presentation with us. We offer some things to someone. So there must be someone who receive what you offer. These help the children to see both the offering and receiving some thing. These social behaviour activities are mostly presented via group presentation because the movement cannot be seen by the collective community. It should be explain to the children and they should see it in you, in your constant indirect presentation, that you are conscious of the persons to whom you offer something. It is for you to see that the persons have no difficulty in receiving what you offer. Have a pleasant expression on your face, look at the person to whom you offer, and speak in a soft voice if necessary. When you offer something to someone you do not let go, before the receiver has a firm hold on the object. Yet you do not hold it; any longer than is necessary. When you give something to someone offer it so that the receiver takes the object as it is meant to be hold. The giver takes any risk involved an inconvenience which may arise.

● How to offer a cup of Tea?

Presentation : (I.A. – G.P. or I.P.)

Have a cup and saucer with a tea-spoon on the saucer. The handle of the cup and the

spoon should be placed in such a manner that a right handed person will have it to right as the reverse for the left handed person. The spoon is placed on the side of the cup, which is away from the receiver.



Control of error :

- (1) The saucer and the spoon should be dry.
- (2) No tea is spilled on the spoon or on the saucer.

● **How to offer a Glass of Water**

Presentation : (I.A. – I.P.)

The glass should be filled three-quarter full with water. Generally we offer it on a tray or a saucer. If offer hand to hand, then we may place of right hand under the glass as a tray or we may hold the glass at the middle with the right hand.

Control of error :

Not to spilled water.

● **How to offer a Pointed Object?**

Presentation : (I.A. – I.P., G.P.)

When offering a pointed object, see that neither you nor the person to whom you offer it is in danger by the object. Keep the point to the left. Hold it, so that the person can use it without making any re-adjustment.

● **How to offer a Pen?**

Presentation : (I.A. – I.P.)

The pen is held in the right hand. Place the cap of the pen at its back. The nib is towards the left and your hand is towards the back of the pen over the cap. The pen is pointed slightly towards you. So that the person can take it and use it immediately.

● **How to offer a Pencil?**

Presentation :

This is offering in the same way as the pen but it is hold at the middle.

● **“Offering a pair of Scissors”**

Presentation :

Hold the Scissors at the joint with its handle pointed towards the person and the point towards the left.

● How to offer a sharp object (Knife)

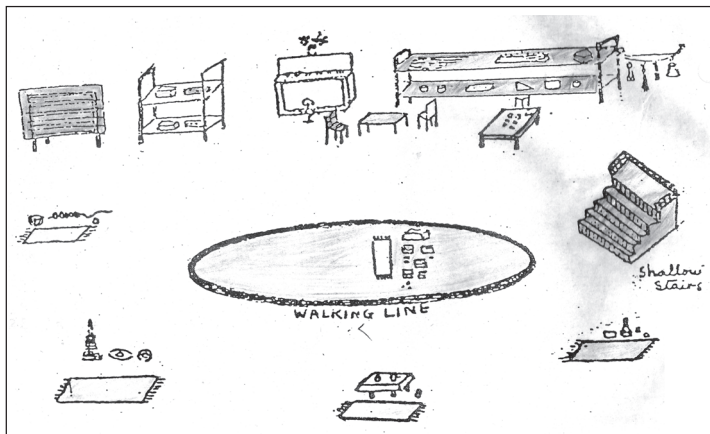
Presentation :

The Knife is hold at the joint of the handle and the blade with its point to the left and the sharp edge downwards. Offer it in such a way that the person can take it and use it immediately. The sharp edge should never be touched.

How to walk in line?

This is a universal fascination. Dr. Maria Montessori notice this universal phenomenon. She had learnt from children. This universal phenomenon set her thinking i.e. then must be some positive purpose behind this irresistible urge phenomenon i.e. while walking, all children make difficulties in walking, they create difficulties themselves while walking.

What's the purpose behind challenging so on the basis of her repeated observation and phenomenon. Dr. M. Montessori came to certain conclusion, the validity of this conclusion i.e. power of balance, it needs to conquest and for this conquest child



needs challenges in maintaining their equilibrium and they need to consolidate the balance.

The development need expected by all the children i.e. while walking. Nature not only alert development task, it also give power to do the task and urge to carry out the task. They are time table and child follow according the time table to fulfill the task. He also receive another form of help from nature i.e. nature creates a irresistible hunger. Nature is hungry for those activities which the child needs for this development. The developmental activities according to his tasks is allotted by nature. What capacity is indispensable for his development ? The activities of exercise of practical life. For further consolidate over balancing equilibrium, he has to have mastery over his walking.

What are our duties with regard to this?

We have to have lines on the floor for the child to walk on and this must on the living room and this lines must be elliptical and it can as large as possible and this line should be a meter or 1½m away from the walls. This line should be 2 mm and it should be attractive colour with paint colour.

We should collect other materials i.e. collection of flags of different country. Flag should be 20 cm × 15 cm and they have wooden rods of 45 cm.

Beside this flags we have 3 or 4 strings 30 cm long, on the end of which a couple of beads and 3 or 4 strings on which glass belts are tied.

We also have 3 or 4 tiny liquor glasses. 3 or 4 small trays 30 × 20 cm, and also have basket.

● **Presentation :**

For the presentation, invite the children and say, “You stand on the line, will you?” Adult also stand on this line and show the child, “Look you are going to walk on this line and demonstrate look when we walking we put our feet exactly over the line. Watch me how I am putting. Now adult suggest all children all behind other and show how to move and walk.

Then suggest the child to stand on arm distant from the other child and then you give clear instruction.

- (a) Walk one behind the other.
- (b) While walking don't change your place (maintain the row).
- (c) Remain at arm's length.
- (d) Constantly be at arm's length.
- (e) If we leave the line do so near the place where you occupied the line before walking.
- (f) Join from your place where there is enough place when they want to join the group.
- (g) If walking on the line is accompanied by music, then the joining and disjoining is done when the music is not going on.

Now I am going to start, we should remember to put our feet exactly over the line and for a few days you find children walking over the line on looking the lines and wait for few days most of the child walking on the line without looking. Now the adult will say, ‘I will show you another way i.e. one foot in front of the other i.e. all the time back foot touches the heel of the front foot. There is a smooth music, help them concentration and make them challenging, give them flag and notice the flag should not staging down. When the child is carrying the flags, then you tie the beads with string on the flags and then the bells and they should not make any sound. For another day, then offer liquor glasses empty, then with water and tell him to walk without split any drops of water.

Then other day tumblers without water, next day with water and then glasses on the tray. Then geometrical solids on the tray without making any noise. Then we also suggest the child to put ring on the head and put the basket on it and walk, basket without any thing and basket with rolling things and then carrying over larger basket with basket rings and then gradually basket without rings.

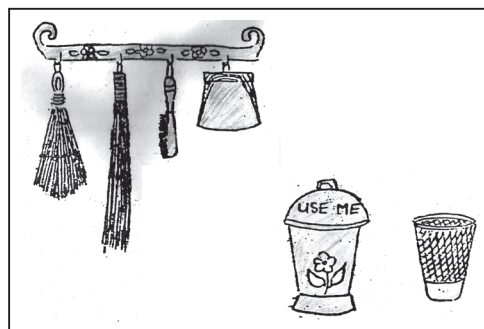
Unit 3 □ Taking Care of Environment

● How to Sweep?

A broom of Local Characteristic. The size of the broom should be in proportion to the child's physical proportion. The broom should be strongly bound. The part by which it is to be held should be colour or we may bind, colour string around it. This colour should be correspond to the colour of the handles of the dust pan and brush, with which it form a set.

● Display :

Hang the broom on a hook, from the handle. The end of the broom should be few centimeters above from floor level. Hang it to the right of the dust-pan and brush (to your left when you stand facing the material).



● Display :

Presentation : (I.A – I.P and small group presentation)

“Stage Preparation”

Prepare the place with some dust without the knowledge of the children. See that the area is not too large or too small. If there are no natural demarcation on the floor (e.g., flag stones on other designs), we may draw the area.

Presentation proper

Indicating the proper area, tell the child that you are going to sweep it. Let the child see you bring the broom. Holding it by the handle with the other end hanging down. Keeping it away from your body. Stand at the end of the area away from the children. Put the broom Oblic on the floor near the right hand side. Bring the dust from right to left about half of the area. Before lifting the broom, bit it gently. Sweep the area towards the left. Bring the broom back to the right hand side and place it on the floor, so that it covers of part of the already swept area. Work forward on the swept area. Continue the same movement till the whole area is swept. Now draw the children's attention to the line of the

dust at the left hand side. Sweep the line towards the end nearest to the children. Inspect the swept area. Ask one of the children to inspect. Go and keep the broom back. Ask one of the children to get the dust-pan and brush and remove the dust or you do so.

Point of interest :

- (1) The second stroke should cover the part of the area covered by the first stroke.
- (2) The line of collected dust.

Control of error :

Not to speak of dust should remain over the swept area.

Foot Note :

If the area is large, we can collect the dust in the centre by the same movement.

● How to use a Dust pan and Brush ?

Material Description :

The dust-pan is made of metal sheet. The front edge should be slightly inclined an even. There should be a cover over half of the depth of the pan. The handle should be on the top of the cover. The front edge of the pan should be in the same colour on the handle and this colour should be contrast with that of the other part of the pan. There should be 3 to 4 dust-pan, corresponding to the number of brooms.

Brushes :

As many as the dust-pan. Size of the brush :

The length should be slightly less than the front edge of the dust-pan; so that it can be kept in the pan when it carried. The handle of the brush, should be the same colour as the handle of the Pan.

Display :

The pan and brush should be display hanging from a hook together, at a level, which indicates where they will be used.

Presentation : (I.A. – I.P or Small Group presentation)**Stage Presentation :**

Before the children come (without their knowledge) put some dust in a heap. While presenting the activity, have a dust-bin in the environment within view of the child for use during the presentation. It is better to have one to open by pressing a lever with the foot.

Presentation :

When the children have settle down; go and get the dust-pan and brush. Carrying the dust-pan on left hand, and the brush in the pan and hold with the right-hand. Hold both horizontally and slightly inclined to the left and come to the place of the presentation.

Sit on your hunches; in front of the heap of the dust. So that it is between you and the children.

Take out the brush from the pan. Put the pan on the floor near the heap of the dust. So that it is in the middle of the edge of the pan; between the pan and the child.

Brush the dust into the pan till no dust is seen. Lift the pan and draw the child's attention to the line of dust. Place the dust-pan in such a manner that the dust-line is perpendicular to the edge of the pan and is visible to the children. You remain at your place.

Brush the dust-line into the pan. Lift the pan and draw the children's attention to the dust-line. Place the pan as before and brush the dust into the pan. Repeat the same movement till not a speck of dust remain. Inspect the place, ask one of the children to inspect. Then placing the brush in the pan over the dust. Stand-up, go to the dust-bin, remove the brush and shake off the dust into the bin. While doing so, turn your face away from the bin. If necessary, clean the pan with the brush and then brush with the edge of the pan. Return the pan and brush to their place.

Point of interest :

- (1) Keeping the dust-pan so that the dust-line is at the middle and perpendicular to the edge of the pan.
- (2) Changing the position of the pan without changing of own position.

Control of error :

No speak of dust is left.

Unit 4 □ Taking Care of Ourselves

● Care of Ear

Eyes, ears, nose, tongue and skin are the five sensory organs of our body. They give us sense perceptions. The eyes help us to see; the ears help us to hear sounds; the nose helps to smell odours; the tongue gives us the sense of taste and the skin gives us the sense of temperature.

As in the case of all other sensory organs, the ears must also be taken care of. The structure of the ears is peculiar. They are made of soft bones and light muscles called ear lobes. Inside the ear channel, there is a piece of thin tightly stretched skin, which is moved by sound waves, making one able to hear. This organ is called eardrum. If the eardrum is damaged, we become deaf or hard of hearing. So we must take care of our ears.

We must not drive sticks into our ears. If we do, the eardrum will be damaged. Even we should not pour oil into our ears. Nor should we use any instrument to drag the scales out of ears. The body itself will expel such scales in natural course.



(Eardrum may be protected by correct use of your finger)

Sound above sixty-five decibels affects our ears. A heavy slap or the sound of a great thunder or that from blasted bombs or crackers of high 1, potency may turn us deaf. If we feel uneasy, we may tickle our ears only with clean fingers.

While having dips in the ponds' and rivers we had better keep our ears closed with our fingers. Or water will flow into the ear channel and ultimately create sores. If we ever feel that pus is coming out of our ears, we must consult doctors and use medicines. We should never go by the advice of laymen.

Let us keep our ears away from the worms, ants, insects and dirt. Never allow any such things to enter ear holes.

Source : Basanta Kr. Roy

● Use of Combs

A comb is a very useful article of nearly constant use. All persons save the monks and nuns use combs to keep the hair free from being unkempt.

Tousled hair may indicate a disturbed heart, but even that is not preferred to-day when human emotions are trained to remain at a low key. A comb not only keeps the hair in place

but removes dust, adherents, dandruff and even lice. If we suffer from dandruff and pediculosis or lice infestation, we must rush to a doctor because a comb in such cases will be of little use.

Various types of combs are available in the market. While three or four decades ago, only combs made of cow or buffalo horns were available, now we can have good quality combs made of polyethylene fibre. They are quite cheap, hardy and better.

The bristle points of a good comb must not be sharp. Often we enjoy scratching the infected scalp with the sharp combs, but the scratching intensifies the infection, leading to massive hair fall.

Gentle combing is a good massage for the scalp. It enhances circulation of blood and strengthens the follicles. It is good to comb the hair before a mirror. A mirror that is fixed on the wall or fixed on the dressing table is preferable; but we may also use a small mirror that we can hold with our hands. If we use such mirrors, we must use it very carefully, because it is most likely to fall off in carelessness. We ought to comb our hair once in the morning, once after bath and last once before going to bed. The comb must be cleaned with detergent soap from time to time. It is hygienic to have a personal comb as this is generally safe.



(Comb should only be used for hair)

● Use of Umbrella

When we move out of home, we may confront either the sun or shower. While the sun is enjoyable during the winter, we feel being nearly scorched in the summer months. When rainy season comes, rains drench us. Hence, we should always carry an umbrella during the summer months and during the rainy season.

While a cap or a hat may help us during the summer months, during the rainy season we must use an umbrella or a mackintosh (raincoat) to protect us. Even, during the summer we should use an umbrella, not a cap or hat for two reasons: first, if we wear a cap or a hat, our scalp will sweat and secondly, this is not in vogue in our country. Now-a-days, foldable umbrellas are in vogue, and we may carry them as they are very easy to keep.

People will get irritated if a person with a large umbrella oozing out drops of water try to get into a bus or in a train. An umbrella is of little use during a nor'wester or when there is a heavy shower accompanied with a strong wind.

Some are found to carry an umbrella on their shoulders. This is bad and very very risky as some others who may be coming just behind them, particular-lay in a crowd, procession or festiveal may suddenly be blinded with the pointed end. of the umbrella rod

that was there on the shoulder of front man. Thus it may draw answer of sharp and fatal retaliation. We must be therefore very cautious about it and always keep sharp end of the umbrella rod down.



(Don't carry the umbrella on your shoulder)

While using an umbrella, we must be cautious, for losing an umbrella in a bus or in a train or in a shop is a common incident. While trying to keep other things safe, we often leave the umbrella out in a place where we go on business. That is why, before leaving a place, we must check that we have not left our umbrella.

If the umbrella gets wet, back home we must open it up and allow it to dry. Otherwise, the cloth of the umbrella will not last as long as it should.

If we find an umbrella lying somewhere unclaimed, we must not try to take it and get it home. Not only it is an act of stealing someone's property, but in these days when terrorism is at a high pitch, some powerful explosive may be left inside it. We should call in people or if we see such an umbrella in a train, we should inform the railway police of it or make the bus conductor aware of it.

It is bad to use an umbrella as a weapon or a plaything. If we do so, the umbrella will be broken and we will have to buy a new one. If umbrella develops tears, we should take it to those who repair torn umbrellas.

● Sitting Posture

We are often required to sit not only for rest but also for work. A chair is the best seat; if it is lightly cushioned it is comfortable. We should, even if we are extremely tired, take a seat slowly. To drop abruptly on a seat, a chair or a bench, is very bad because our spine and testicles and the private parts of the body may receive injury.

Before we sit on a chair, we must check that it is in good condition. If the seat is dusty, it will spoil the dress and if any of the legs of a chair is broken, one will fall down and receive serious injuries. If we find that the seat is dirty, or oil, water, pins, nails or phlegm are found there, we must have it cleaned first, and if we find the legs broken, we must not sit on it at all. That will embarrass us.

Sitting with our spine straight is the correct posture. This develops a very good blood circulation. However, when we work at the desk, it is not always possible to sit straight. Hence, we should stretch back our spine and hands from time to time or walk about at least every one hour.

Unless it is a rocking chair, we must not rock while sitting on a chair. Some people have the bad habit of squatting on a chair or even resting their legs on the tables or desks

and cocking them. We won't do that as that is utterly impolite; They had better be asked to sit on a mattress on the ground.

While travelling in a train, we must not sit on the seats cross-legged, even if there is enough room. This is very indecent. Before we take seats, we must check if there is dirt. If we see the seat smeared with filth - vomitus, sputum or catarrh, we must move elsewhere.

If we find elderly or sick people or ladies standing before us, we should offer the seats to them. This is a courtesy that is highly commended. It is very discourteous to elbow out people in order to make room. Even though our grand parents love us dearly, we must not drop down on their laps all on a sudden. It may cause them pain or accident.



Whether we work in an office or are engaged in work in our private study or drawing room, we must welcome a visitor by rising up and requesting him to take seat. One should take one's seat after the visitor is seated. *(This is not correct posture)*

It is an act of etiquette to bid goodbye to a friend or a guest by standing up and walking a few steps along with him and see him off. We must not forget to say welcome to a guest, and say "Goodbye, Please come again." When we visit a person in his office or in his house, we must not occupy a seat unless we are asked to.

● Reading

We must have some education. If we do not have it, we shall not be able to acquire knowledge and remain ignorant about many things in the world. Education leads a man forward; hence everyone must have education to the possible extent.

Children belonging to poor and destitute families cannot have higher education, but they can easily complete the primary level. It is catered free now with food also in some areas.

Self-study for an hour or two, after learning the three R's, makes a man know well, and whatever job he does he can have this benefit by the exercise of his will. At the beginning, everybody needs guidance, but after a stage, one can study for oneself and this will bring no less rich a result.

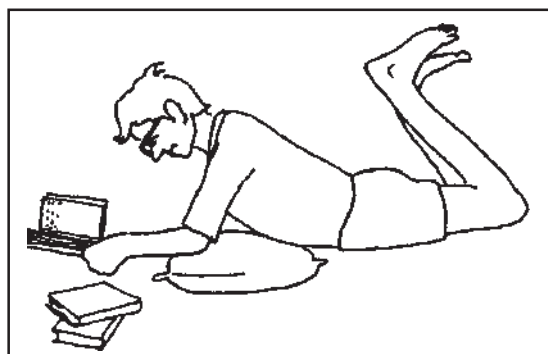
One can read whenever one wills, but it is better to select an hour of study. This depends on the time of leisure one finds. If one is a full-time student, one should spend at least three hours in the morning and three hours in the evening.

The morning hours are the best period for learning something by heart or learning something by rote. The evening hours are suitable for contemplative study. The hours in the

midday can be spent in translation, solving mathematical problems, handwriting practice and drawing maps.

The question is that one should prepare one's own routine and devote the time to studies with full attention. On the eve of examinations, hours of study should be expanded, but that must never be at the cost of sleep. Again, when one is sick, one should take rest as much as possible.

When we read in a group in the classroom, we must not gossip or cut jokes with other



(This practice must be avoided)

students. This will not only do harm to us but will also disturb the instructor. Whenever we study or wherever we take lessons, we must be serious and must not sidetrack. For private study, we must find out a secluded place. We must sit erect whether we sit on a chair or bench or on the floor. We should hold the book close to our eyes with our hands, and must we never bend our body. If we read a subject with deep attention, we shall derive immense pleasure. If we feel

distracted, we should stop a little and then resume reading.

Ordinarily, children should read aloud. This helps them learn the lessons by rote and secondly, the parents or guardians or teachers will be able to know if one is reading correctly.

While reading, we should understand the contents of the book, otherwise reading is just wastage of time. If we fail to understand the meaning in a single reading, we must read the substance again. We must not give up unless the contents are comprehended. Not always, we can understand the meaning of each and every word. In that case, guesswork is necessary. While reading a big novel, we can skip lines. If we fail to comprehend something, we must not hesitate to take the help of a learned man or of our teachers. The use of a dictionary is very helpful. At any rate, the meaning of the subject and its object and the spirit of the lesson must be acquired, obtained and mastered.

Life is the best book of study. Except in certain cases, we can match our lessons with our experiences. This habit enables us to obtain real knowledge. The life of Sher Shah teaches us how a man born to ordinary parents could become the emperor of a country by virtue of enterprise, courage and wisdom while Jahangir has set a different example. He nearly ruined the empire he inherited through luxury, indolence and inefficiency. Let us lead our life with the enterprise and courage of Sershad and shun the lifestyle of Jahangir. This, in particular, is the spirit and meaning of the lesson in History.

[Source : Talks Friendly by Basanta Kr. Roy]

● Folding Napkins

Material Description :

These napkins are made of durable good quality cotton. They should be in plain perfectly light colour, and perfectly square in shape and size should be $28\text{ cm} \times 28\text{ cm}$ after stitching.

The cloth should be washed before cutting. The edges are hemmed in contrasting colours, so that the stitches stand out and look the same on both sides.

Over the Napkins have a guiding lines for folding. The stitches should be same on both sides. This guiding lines could be made of straight or running stitch. The thread used for the edges and the guiding lines should be the same.

There are four types of napkins.

- (1) Napkins divided into quarters by medials.
- (2) Napkins divided into eighths by medials.
- (3) Napkins divided into quarters by diagonals.
- (4) Napkins divided into eighths by medials and diagonals.

In a 'House of Children' there should be three or four of each type of napkins with variety in colour of cloth and threads.

Display :

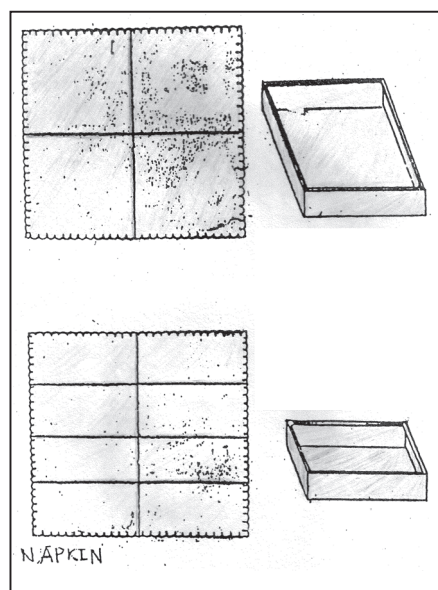
Each type of napkin has own container. The shape and size of the container should corresponds with the shape and size of the napkin. The container should be of 2m larger in all sides from the folded napkins and its height on all sides should be $2\frac{1}{2}\text{ cm}$.

The shape of containers should be as follows :

- 1st Container — Square.
- 2nd Container — Rectangle.
- 3rd Container — Right angle isosceles triangle.
- 4th Container — Same as the 3rd container in shape but smaller in size.

Foot Note :

Activities with these napkins are presented on chowki. We present only two types of napkins i.e. one divided into quarters by medials and other are divided into quarters by diagonals.



● How to pick-up and carry a napkin?

Presentation : (I.A. – I.P. or small group presentation)

Have a napkin at the place of presentation. Just lift one of the corners of the napkin and then place the left palm under the napkin. Place the right fingers over the napkin, lift vertically and carry it.

Control of error :

No part of the napkin should be hanging.

● How to Fold a Napkin divided into quarters by medials?

Presentation : (I.A. – I.P. or small group presentation)

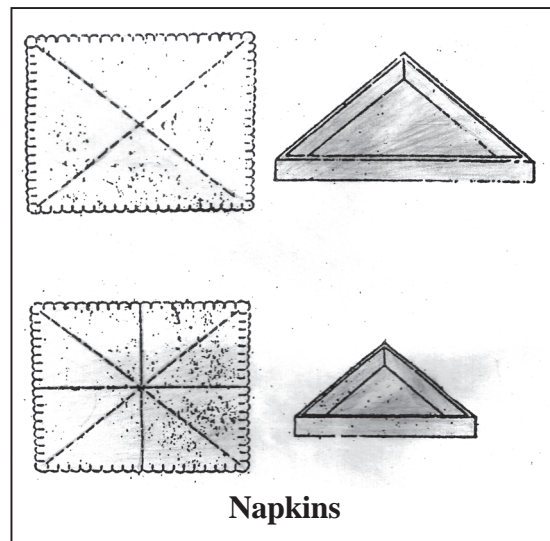
Have a folded napkin divided into quarters by medials at the place of presentation. Unfold and smoothen it as usual. Then tell the child (indicating the guiding lines with your right index) “Now we are going to fold this Napkin along these lines; Watch.”

Hold the right top corner with your right thumb and index and the right base corner with your left thumb and index, lift the edge and turn it, towards the left. Ask the child, “Tell me, when this edge is about to touch this edge”. Move the edge gradually towards the left, keeping near and parallel to the surface of the napkin.

Stop when the child tells you that the edge has reached the other edge. (If he does not tell, you stop and remained him).

Show the child how you place the corner over the opposite corners, saying, “Look, we keep this corner exactly over this one.”

Then show the child, how we smoothen the napkins. Holding down the open edges with our left thumb and index and smoothing the napkins part by part with the edge of the right palm, moving from the open edge towards the fold. Now hold the right top corner with right index and thumb and the left top corner with the left index and thumb. Turn the edge towards the opposite edge and ask the child to tell you when it reaches the other edge. Hold the napkin and smoothen it as before. Draw the child’s attention to the fact that the napkins look just like it, when we brought it and also that the open edges one over the other and guiding lines are visible along the folds.



Point of Interest :

- (1) Watching for the edge to reach the opposite edge.
- (2) Placing the corner over the opposite corner.

Control of error :

- (1) The folded napkin should be a perfect square.
- (2) The edges should coincide perfectly.
- (3) The guiding lines should be visible over the fold.

● How to unfold a napkin divided into quarters by medials?**Presentation : (I.A. – I.P. or small group presentation)**

Ask the child to bring a folded napkins to the place of presentation. Hold the two top right base corners with your right index and thumb and other corner of the same edge with your left thumb and index. Turn the edge and take it to the opposite side, keeping it near and parallel to the surface. Hold the right base corner with left thumb and index and right top corner with right index and thumb and take that edge towards the opposite as before. Now smoothen the unfolded napkin as usual.

Control of error :

The unfold napkin should be without any wrinkles.

● How to fold Napkin divided into quarters by diagonals?**Presentation : (I.A. – I.P. and small group presentation)**

Have a folded napkin divided into quarters by diagonals at the place of presentation. Unfold and smoothen it as usual. Tell the child, indicating the guiding lines, “We fold this napkins along these lines.” Hold the right top corner with right index and thumb and turn it towards the diagonally opposite corner. Ask the child to tell you when the corner, you are folding, reaches the opposite corner.

Move the corner towards the opposite corner following the guiding lines and keeping it near and parallel to the surface. Stop, when the child tells you, that you reach the opposite corner. Smoothing the napkin as before. In the same way, bring the left top corner towards its diagonally opposite corner folding it with right index and thumb. Smoothen this fold as before. Draw the child’s attention to the fact that it look just like it did when it brought it, the edges are over the other and the guiding lines visible over the fold.

Point of Interest :

- (1) Watching the corner to reach the opposite corner.
- (2) Placing the corner exactly over the opposite corner.

- (1) The folding napkin should be right angled isosceles triangle.
- (2) The edges should be coincide perfectly.
- (3) The guiding lines should be visible, over the folder.

General Material Description :

The frames are to be displayed within reach of the child, all of them one after other. They are hung from rectangular hooks, two hooks for each frame.

● How to close press Buttons

The flap of the frame are made of cloth. The edges overlap, right flap overlapping the left flap. Along the edge of the left (over the flap). A series of cavity halves are attached (when we stitched the thread should not visible on the other side) along the open edge of the right flap (under the flap) is attached the corresponding series of studs. They are pressed so that they are 1 cm away from the edge. There should be 5/6 press buttons on the frame, equidistant from each other.

Presentation : (I.A. –I.P.)

This activity is done on the chowki. Invite the child and take him to where the material display. I show him how we remove the frame from the hooks. Hold the frame with both hands and lift it. Bring it towards you from the hooks. Bring the frame on the chowki, open the button and the flaps without analysis of your movement.

Hold the left base corner of the left flap, with your left hand. And the left top corner with your right hand. Lift the flap and bring it to the middle. Hold the right base corner of the right flap with the left hand and the right top corner with right hand. And bring that flap to the middle over the left. Insert the right thumb under the right flap near the top stud and place the right index over the stud (we always work from top to bottom) and turn the flap towards the right. Hold down the top most cavity with the left index and thumb. Bring the thumb just over the cavity. Draw the child's attention to it and ask the child, to listen. Press the stud into the cavity with your right index. Release your fingers one at a time. First right fingers, then the left. With the same movement close all the buttons. Then go back to the top button and inserting your right thumb just next to the close button place the right index on top and inspect all the button, to see that they are properly closed.

Point of Interest :

- (1) Before pressing make sure that stud is exactly over the cavity.
- (2) The click sound of the bottom.

Control of error :

Inspecting to see that all the bottoms are closed.

● How to open press button?**Presentation : (I.A. – I.P.)**

Invite the child and ask him to bring the frame. Insert your right thumb below the right flap near the top button and place the right index over it. Insert the right thumb nail between stud and the cavity. Draw the child's attention to this. Place the left thumb and index over the left flap to keep the button in position. Then ask the child to listen for the click sound; and with the help of the right thumb nail; hold the stud out of the cavity halves towards the right, tell the child, "Look, I open the button with my nail." Then release the fingers of your hands one at a time. Continue the same movement till the all buttons are open.

Then with the right thumb and index inspect and make sure that all the buttons are open. With the left index and thumb hold the base corner of the open edge of the right flap and with right thumb and index, hold the base corner. Open the flap completely to the right,

with the left thumb and index. Hold the base corner of the left flap with left index and thumb and with right index and thumb hold the top corner and open the flap completely to the left.

Point of interest :

- (1) Inserting the right thumb nail between the two halves of the close button.
- (2) Opening the button with the right thumb nail.
- (3) The click sound is heard when the stud is pulled out of the cavity.

Control of error :

Before opening the flaps inspect to see that all the buttons are open.

● **How to close coat button?**

Material Description :

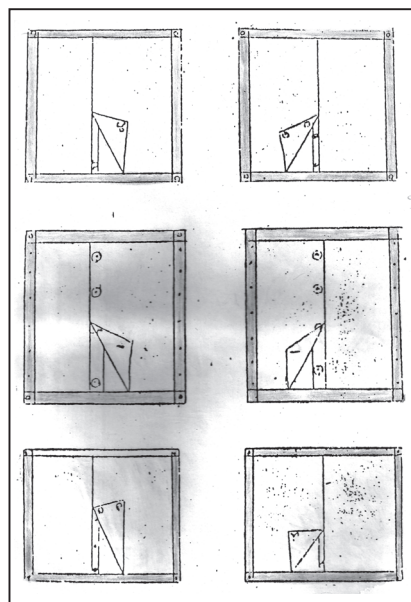
Flaps overlapping; left flap over the right flap. Over the right hand flap; button are stitched. The button should stand on a steam. The length of the steam should be such that it is possible to turn the button to a vertical position, without pulling it. (i.e. it should be slightly more than the radius of the bottom).

On the left hand flap the button hole are made. The hole should be a little larger than the diameter of the button. The holes are slits made horizontally. There are 5 or 6 buttons on the frame. This frame is presented after the press button frame.

Presentation : (I.A. – I.P.)

Go with the child and bring the frame to the place of presentation. Open the button and then the flaps without analysing the movements. Bring the right flap to the middle as usual and bring the left flap over the right.

Insert the left thumb below the left flap near the top button hole and hold with the left sides. Turn the left flap little to the left to expose the button. Hold the button with right index and thumb and make it stand vertically. Bring the left flap over the vertical button, so that it will be come out through the button hole and now release the left hand. Draw the child's attention towards the button coming out through out the hole. Hold the button with the left index and the thumb at the top part that comes out through the hole. Now release the right hand. Hold the left flap near the button hole with the right index and thumb and pull the flap down over the button, till the button comes out of the hole. Push button-hole over the steam of the button. The button should never be pull or pushed nor made to change direction.



Put the button into horizontal position with left index and thumb if necessary, do the same movement until all the buttons are closed.

Inspect whether all the buttons are visible on the top of the holes.

Point of Interest :

The button coming out of the hole.

Control the error :

All the button should be appear on the top of the respected holes.

● **How to open Coat button.**

Presentation : (I.A. – I.P.)

With the right index and thumb hold the left flap near the top button hole and pull it a little. With the left index and thumb hold the button and make it stand vertically in the button hole. Draw the child's attention towards it. Pull the button hole vertically upward until the left is pushed off the button and the button is released completely. Draw the child's attention to the fact that there is no pulling of button.

Performing the same movement open all the button. Inspect whether any button is visible on the flap. Open the flap as before analysing your movement as you do so. By turning the bottom flap down. Try to avoid noise.

Point of Interest :

- (1) The button standing vertically in the bottom-hole.
- (2) The flap pushing the left hand of the button.

Control of error :

Not a single button is visible over the folded flap.

● **“Lace Frame”**

Material Description :

Flaps are facing each other; they should be close to each other. They are made of leather or cloth with leather facing. Both the flaps have a series of holes about 8 to 10 holes. The holes have metal rims. The lace should preferable be cylindrical; not flat. Half of the lace should be in one colour and the other half in a second colour. (Two lace are join invisible). The length of the lace should be such that after passing through all the holes, the remaining part should be equal to the length of half the frame.

The ends of the laces should be metal tips. This should correspond if possible to the colour of the laces.

Some general rules :

- (1) The laces should be handled with the hand corresponding to the direction from which the lace is to be inserted.
- (2) The flaps are hold with corresponding hand i.e., left flap with left hand and right flap with right hand.
- (3) Cross the laces with one hand only.
- (4) There should be no obstruction when the tips are inserted or taken out of the holes.
- (5) Hold the flap vertically and insert or take out the tips horizontally.
- (6) Whenever you insert or take out the lace, do so part by part, not all at once.
- (7) When crossing the laces, the lace put over the other one, should by constantly be put over the other one, i.e. if you cross left over right first, continue the same for all and vice-versa.
- (8) While untie the laces; always take out the lace which is on top of the cross first.
- (9) While tying the laces always insert the lace which is under the cross first.
- (10) While tying or untying the lace, DON'T TURN THE FRAME.

How to tie laces 'V' pattern or "Fish-bone" pattern.**Presentation : (I.A. – I.P.)**

Go with the child and bring the frame. Untie the laces; and keep it at the right side and open the flaps without analysing your movement. Close the flap as usual. Keep the laces folded into two vertically in the middle of the frame; with both ends a little bit apart. Hold the right flap vertical bit the right hand, with the left hand hold one of the tips, and insert it from inside out through the top hole. Draw the child's attention towards it; how the tip is out completely at the right side; release your left hand, lower the flap at little bit and hold the tip again with your left hand. Pull the lace out towards the right part by part upto the center, where it is join. Release both hands once at a time. With the same movement inserting other end of the lace into the top left hole with the right hand holding the tip of the lace. Make the lace equal by holding the two ends with the right hand and pulling them equal part by part with the left hand. Put the ends on their corresponding sides at the lower corner. Now cross the laces with the right hand. When you cross the first lace keep it below and parallel to the other lace, then bring the other lace over the first one. Always cross the same way. Insert the lace which is underneath of the cross from inside out and then other lace.

While doing so hold the flap and laces with corresponding hands with the right thumb and index, hold both the laces, near the cross. Put the left thumb and index just over the two corresponding holes and tying by pulling the two laces hold with the right hand, pulling downwards and not too hard. Go on lacing in this manner till the laces have gone through

all the holes; when they come out from the last pair of the holes, they tie a bow or invite the child to do so. Insert the bow inside the flap.

Point of Interest :

- (1) Not to hear any noise while inserting the tips.
- (2) The tips should coming out of the holes smoothly.

Control of error :

- (1) Regularity of the pattern i.e, alternate colour overlapping.
- (2) The right lace overlaps the left through out or vice-versa.
- (3) The 'V' will be facing upwards. On the front of the frame with the same regularity of the pattern.
- (4) On the other side of the frame, we see first a horizontal line in two colours and then 'V' facing downwards.

● **How to untie a lace?**

Presentation : (I.A. – I.P.)

Untie the bow as usual. Keep the laces on corresponding flaps. Hold the flaps and laces with corresponding hands. The hand that pulls out the lace should correspond to the direction in which the pulling is done. Always take-out first that lace which is on top of the cross.

Slow down the pulling when the tip is about to reach the hole and take the tip out of the hole.

After the lace is out of all the holes, keep it at the right side of the frame and open the flaps.

Point of Interest :

The tip coming out smoothly without noise.

Control of error :

The entire lace is out of the frame.

● **How to tie a lace cross (×) pattern?**

Presentation : (I.A. – I.P.)

As in the 'V' pattern bring out both the ends of the lace from inside out through both the top holes.

Make them equal as usual and cross them. Insert the tip of the lace which is under the cross from outside in.

Do the same with the lace which is on top of the cross.

Now cross the lace which are under the flaps. Bring the lace from inside out. First bring that one which is under the cross and then the one above the cross.

Tighten as before. Continue the same till the lace goes through all the holes.

The inserting is done alternately from outside in and from inside out. Tie a bow at the end (even if the laces underneath; tie the bow on the top). Then put the bow on top and ends underneath.

Point of Interest :

Same as 'V' pattern.

Control of error :

- (1) The regularity of the pattern, i.e. always the same colour laces is on top of all the process. The same is seen on the other side of the frame.
- (2) On the other side of the frame, we also seen the horizontal line in two colours from the first pair of holes.

● **“How to tie a laces linear pattern or horizontal pattern”?**

Presentation : (I.A. – I.P.)

First insert both the tips from outside in through the top pair of holes. Adjust the lace so that on top, we see only one colour lace.

Now cross the laces which are under the flaps. Bring out the second colour lace from inside out and again insert the same lace from outside in through the horizontally opposite hole. Keep both the laces, on their corresponding flaps. Again cross both the laces. Now bring out the lace of first colour from inside out and insert that lace into horizontally opposite hole from outside in.

Continue the same for all for the last pair of holes. Bring out the laces through both the holes from inside out. Tighting the lace by pulling each lace gently. Then we tie a bow and put it underneath.

Point of Interest :

Same as 'V' pattern.

Control of error :

- (1) On the right side of the frame; we see horizontal lines in alternate colour.
- (2) On the other side of the frame we see a regular pattern (a sort of hemming bone pattern), with the same colour lace on top of each cross.

● **Ribbon Frame**

Material Description :

Two flaps facing each other but slightly apart. On each of the two flaps 5/6 ribbons are attached in two colours, one colour on each side. The ribbon being in two colour helps the child to see the movements clearly.

The ribbon should have a right and wrong side (e.g. satin ribbon).

Each ribbon is about 2 cm wide and 28 cm long. They are stitched to the flaps.

The loose end is invisible or pinked. The shiny sides should be upwards.

These ribbon must be ironed daily.

● **“How to tie the base-knot”?**

Presentation : (I.A. – I.P.)

Open the flaps and straighten the ribbons. Bring both flaps to the middle, one at a time. Straighten the ribbons over the corresponding flaps. The dull sides are facing upwards. Hold the left ribbon near the end with the right thumb and index and bring it over the left flap.

The left ribbon is on top of the right ribbon; the ribbons are with shiny sides upwards.

Insert the right index from the top of the ribbon of the right flap and put the right thumb on top; about $\frac{3}{4}$ cms away from where the ribbon cross.

In the same manner hold the ribbon on the left flap; with left index and thumb. Now bring the ribbon held on the right hand across over the left ribbon.

While doing so, smoothen it with right index. Push it through with right thumb across and under the ribbon hold on the left hand. Draw the child's attention, saying, “See, the right thumb coming out wrapped in the ribbon.” Bring the right middle finger and place it next so the right thumb and place the right index on the other side of the right thumb. Release the right thumb and join it with the right middle fingers and index.

Slide the ribbon out bit by bit with right middle finger index and thumb.

Put the ribbon over the right flap and straighten it. With the same movements tie all the base-knot.

Point of Interest :

The right thumb coming out wrapped in the ribbon.

Control of error :

All the ribbons are of the shiny sides facing upwards.

● “How to tie the Bow”?

Presentation : (I.A. – I.P.)

Insert the right middle fingers under the right ribbon from the top near the frame and hold it with the right thumb. Lift the ribbon held with the right hand to a vertical position. See that the dull side is facing you. Place the left thumb against the middle of the vertical ribbon; on the dull sides and fold the ribbon over your left thumb making loop. Hold the loop at its base between right index; middle finger and thumb.

Then release the left thumb. With left index and thumb, hold the ribbon on the left flap; inserting the left index from the top about $\frac{3}{4}$ cms away from the knot. The remaining ribbon is held with the remaining left fingers. Bring the ribbon held with the left hand anticlockwise around the loop; insert the left thumb below the base of the loop; sliding it over the right middle fingers; seeing that it comes out towards the right. Draw the child’s attention to the left thumb coming out wrapped in the ribbon. The left thumb is now resting on the right middle fingers. Release the right thumb and place it on the left thumb which is resting still wrapped in the ribbon. Release the left thumb. Hold the loop towards the right with the right thumb and middle fingers. With the right index and thumb hold the lower loop and with left index and thumb hold the upper loop and fighting the loops; make adjustment if necessary with both hands. The ends of the ribbons should be equal to the ends of the loops. Repeat the same movements for all the remaining ribbons.

Point of interest :

The left thumb coming out wrapped in the ribbon.

Control of error :

- (1) The top loop and the loose end should be of the same colour as the left ribbon.
- (2) The top-loop and loose ends are seeing on the shining sides.
- (3) The other colour ribbon is seeing as vertical lines in the middle on its shiny sides.
- (4) The lower loop is seeing on the dull sides.
- (5) The lower loose ends are seeing on the shiny sides.
- (6) The loose-end and loop should be equal in length.

● “How to untie a bows”

Presentation : (I.A. – I.P.)

Hold the right loose end with right index and thumb with the left index; hold down the left loose end. Pull the right end slowly towards the right; till the loops jumps out of the knot.

Draw the child's attention to this. Open the bow and straighten the ribbon held with the right hand over the frame. With the same movements, pull the ribbon held with the left hand towards the left. With the same movements open all the bows.

Point of Interest :

The loop jumping out of the knot.

Control of error :

Ribbons are with shiny sides upwards.

● **How to open the base knot?**

Presentation : (I.A. – I.P.)

With the finger's nail facing downwards, insert the left index below the base knot. Move it gently to loose in the knot. With the right thumb and index pull the ribbon which is on top out bit by bit. Place the ribbons over the corresponding flaps. In the same manner open all the knots. Inspect to see that; all the knots are open and the ribbons are over the corresponding flap with dull sides upwards.

Open the flaps as usual.

Control of error :

All the ribbons are seen on the dull sides over the corresponding flaps.

Paper 3B : Development of Sensorial Activities

- 1. Introduction of Sensorial Activities**
- 2. Activity 1 : Visual and Muscular Sense**
Cylinder Blocks
Pink Tower
Brown Stairs
- 3. Activity 2 : Visual Sense**
Colour Tablets
- 4. Activity 3 : Tactile Sense**
Touch Board
- 5. Activity 4 : Acoustic Sense**
Noise Boxes
- 6. Activity 5 : Muscular Sense**
5. (i) Long Stirs
5. (ii) Geometrical Tray
5. (iii) Geometrical Cards
5. (iv) Construction Triangle
5. (v) Baric Tablets

Introduction of Sensorial Activities

The Sensorial activity is also a developmental activity like “Exercise of Practical life”.

When we observe a person to perform this activity; the most outstanding activity, seems to be Sensorial; so it is call sensorial activity.

Voluntary movement; will; senses; emotion etc are all become active when the child performance the activities, al the senses are with him. It is also means of total development and also fulfil the needs of child for his development in a particular time of season.

The child needs to perform the sensorial activity during the same period when he needs ‘Exercise of Practical life’. So both the activities are parallel.

In a ‘House of Children’ we start ‘Exercise of Practical life’ before sensorial activity because :

- (i) 'Exercise of Practical life' actually prepare the child to be able to perform for sensorial activity.
- (ii) Sensorial materials are not familiar to the child. These are available only in the "House of Children"; where as the tools of 'Exercise of Practical life' is very much familiar with the child. So 'Exercise of Practical life' helps the child to settle down in the environment and then we offer sensorial materials.
- (iii) The presentation of Sensorial activities are almost individual. Before settle down the child are not in a position to take individual presentation. So we offer sensorial activity to the child, who are settle down and ready to get individual presentation.
- (iv) The child is not aware of the needs of sensorial activity Sensorial activity don't have any outer attraction; as that the tools of E.P.L. has — The child may even reject them. That is why their interest, will and intelligence are stimulated through E.P.L before we start with Sensorial work.
- (v) When a child does "Exercise of Practical life", he discovers the right way to do the work as he does it, and thereby works to perfect it. In Sensorial activity, the materials itself shows up the error, therefore the child gets an opportunity for corrections his mistakes.

Why is there only one set of material?

The reason is that there are so many activities in the environment, that there is no need for more than one set of material. E.P.L. helps the child to have a minimum control over his movement to do the Sensorial activity.

Our Senses :

Only human being needs education in our own senses. Which those senses are and what role they play in Human life?

There are so many senses;

- (i) **Visual Sense :** This Sense organ located an eye. Size, colour, dimension shapes of things i.e. all physical property of matter observe by eye i.e. visual sense.
- (ii) **Acoustic Sense :** This Sense located with ear to hear and stimulate 'sound' and their loudness.
- (iii) **Gustatory Sense :** It is sense of test located with tongue. It helps the child to distinguish between sweet, bitter, salt & sour.
- (iv) **Olfactory Sense :** This is sense of smell located in our nose.
- (v) **Tactile Sense :** This is sense of touch. It can pursue rough & smooth of a surface in gradation.
- (vi) **Baric Sense :** It is sense of weight.

- (vii) **Kinesthetic Sense or Muscular Sense :** It is also located in our muscles. It registers movement carried out by various parts of our body.
- (viii) **Stereo Gnostic Sense :** This Sense helps to recognise the dimension of a solid without looking but by touching.
- (ix) **Thermic Sense or Sense of temperature :** We have two sets of sense organs — One set register the temperature which is below our body temperature, and another set register the temperature which is above our body temperature.

The Role of the Senses :

Every human works in his own environment. In this environment, it is his task to create a world of his own, which are call supper nature. Intelligence is the main instrument, a man uses for his work. Intelligence is needed to perform any conscious work. Men builds an experience gathered from the past to apply his intelligence according to the environment and nature of the work. Intelligence is a spiritual force, not a material one. It is not directly applied to the environment. There is data and information in the environment around us. The Senses gather that information. But we cannot utilise the information unless our intelligence uses it to arrive at a decision and apply it in the environment through the senses of the body.

At the age of 2½ years, a child needs to become a conscious master of the wealth, and until be becomes conscious of this wealth he cannot grow as a human being. Dr. Maria Montessori says this is second birth of human beings. At birth the physical men enters the world, but at 2½ years a physical man enters this world. At 2½ years a child needs our help to become conscious of his impression. Every visual impression will have to be analysed into its components and re-integrated consciously. He will have to become conscious of all the physical properties of matter which exists in this world.

We will have to help him to understand physical properties of matter by materialised abstraction, so that he can form an idea. When he becomes conscious of all the physical properties of matter he can classify of all the impressions he has gained and help him to develop a well ordered mind. He is also in a position to re-enter and re-explore the world consciously, intelligently, methodically and systematically with his abstract ideas.

All the developmental activities at this stage can be possible with proper tools.

The material which forms an abstract idea and helps to a child to know all the physical properties of matter are called sensorial material.

The Characteristics of Sensorial Material :

1. Material should be very attractive.
2. Sensorial material should be scientifically prepared with all precision and they are universal.
3. Sensorial Material should by physically proportionate to a child's capacity.

4. As a rule, there should be only one set of Sensorial Material.
5. Sensorial material have to be displayed.
6. Maintaining the material is one of our duties and the material should be clean and intact.

Presentation using Sensorial Material are always given individually, Why?

1. All the children do not need the presentation at the same time.
2. Each movement is such a presentation is so precise, it is not possible to show it to more than one child at a time.
3. To help the child to understand the purpose of our activity, our physical movement are not enough, but our mental movements will have to be expressed also. On giving a presentation our face and hands should express our movements, but we should not speak.

Basic Activity Presented and Performed by Sensorial Material :

1. Pairing Activity :

We have sensorial material in pairs, where each property is found in duplicate.

- (a) **Complementary Pairs :** Members that possess all the physical property which the other member also possesses, it makes complete set.
- (b) **Identical Pair :** They are identical in every respect.
- (c) **Partial Pair :** A part of one of object is similar to a part of another object. Pairing activity helps a child to form a consciousness of each of the physical properties and differences between them.

2. Gradation :

Gradation activities with sensorial material helps a child to realise that each physical property differs in degrees and intensities.

Grading follows pairing because pairing as an activity is easier than grading.

Direct Aim :

To help the child to become conscious of all matter, the physical aspect of matter, by means of his senses.

Indirect Aim :

1. Related to refinement of certain types of motor — co-ordination.
2. Preparing the child for the next phase of intellect-based activity.

Activity 1 □ Visual and Muscular Sense

“Cylinder Blocks”

Material description :

There are four cylinder blocks which are highly polished and varnished of natural colour of wood. Each of them have 10 sockets. Over the middle of each cylinder there is a knob which is 1 cm high and it is as thick as like ordinary writing instrument. The body and the base of all cylinders and the inside of the sockets are polished no varnished.

Four series of cylinder blocks have their dimension mathematically graded and therefore four series of cylinder blocks materialise all the four ways in which objects can differ in dimension.

Cylinder Block of “A”

Diameter — 2.5 cm

Height — 1 cm to 5.5 cm.

They materialise one dimensional difference.

Name — “SHORT” & “TALL”.

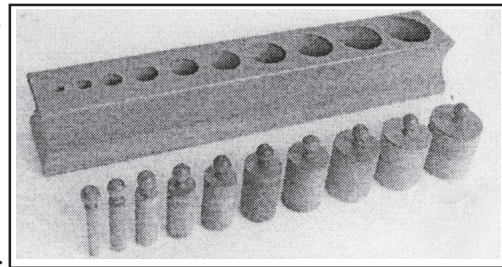
Cylinder Block of “B”

Diameter — 1 cm to 5.5 cm

Height — 5.5 cm

They materialise two dimensional difference.

Name — “THIN” & “THICK”.



Cylinder Block of “C”

Diameter — 1 cm to 5.5 cm

Height — 1 cm to 5.5 cm

They materialise three dimensional difference.

Name — “SMALL” & “BIG”.

Cylinder Block of “C₁”

Diameter — 1 cm to 5.5 cm

Height — 5.5 cm to 1 cm

They also materialise three dimensional difference.

Name — “THICK” & “SHORT” & “THIN & TALL”

Display :

The cylinder blocks are displayed on an open shelf. They are kept together and in a geometrical succession from left to right.

Presentation :

[We give presentation with 'B' block first. If for some reasons block 'B' is not available, then we present either C or C₁ block. We should avoid presentation with block 'A' at first.]

Take the child to the place where the material is kept and show the child how we carry it. The two sides of the block hold firmly in between the palms of two hands, the three fingers on one side of the block and thumb at the opposite side and the little finger at the bottom.

The block is placed at the place of presentation in such a manner that the thickest cylinder is on your right.

Ask the child to watch what you are doing.

Ask the child, "We have to take out all the cylinders from the block." Show the child how you hold the knob of the cylinder with your middle finger, index and thumb. Now slowly raise the cylinder vertically and bring it out of the socket, keep it behind the block. Take out all the cylinders in succession but keep them scattered. We first pick up thickest and lastly thinnest cylinder from the socket. Then ask the child "now watch how I put back the cylinder into the socket."

Adult pick-up any one cylinder and first observe the diameter of the cylinder and then diameter of the socket. Secondly, bring the cylinder to that socket which Adult think corresponds to the cylinder. Lastly the final verification should be done before putting the cylinder into the selected socket by one intentional movement. Do not release the cylinder before it reaches the bottom. Repeat the same activity with others cylinders. When putting the cylinder into the socket, do not make any noise.

Control of error : Lies in the material

Direct Aim :

To help the child become conscious of the three linear dimension (i.e. length, breadth & height), their variations and combinations by means of visual sense.

Indirect Aim :

To help the child acquire prehensile co-ordination involved in holding a writing instrument with necessary and sufficient fingers and thus to help him prepare himself indirectly in writing or other graphic arts.

Age of presentation : 2½ years of old.

Possibilities :

One block at a time — A or B or C or C_1 = 4 possibilities.

Two blocks at a time — A+B, A+C, A+ C_1 , B+C, B+ C_1 , C+ C_1 = 6 possibilities.

Three blocks at a time — A+B+C, A+B+ C_1 , A+C+ C_1 , B+C+ C_1 = 4 possibilities.

Four blocks at a time — A+B+C+ C_1 = 1 possibility.

i.e. 15 possibilities.

Exercises

Reverse Pairing :**1. Activity at random using an indicator :**

Ask the child to bring the block at the place of presentation and take out all the cylinders and keep it scattered way behind the blocks. Then Adult takes an indicator and put it in one of the empty socket and tell the child, "Let us try to find out the cylinder which fits exactly in the socket."

Continue the activity as long as the child needs to do so.

In a presentation we find out Socket for the cylinder, but here we find cylinder for their corresponding socket. So this is reverse pairing.

2. Activity in Succession :

The same activity can be done by indicating the sockets in succession with the index finger. Finding cylinders for the sockets in succession leads him to the grading activity — but without being aware of the fact.

Grading Activity

Grading activity can be done in two ways :

(a) **With the block nearby.**

(b) **Without the block.**

- (a) Invite the child and ask him to bring the cylinder block and take out all the cylinders and scatter them on the working mat.

After scattering then keep the block close by and ask the child to find out the thickest cylinder, then next thickest cylinder and so on; arranging all the cylinders in succession (according to their gradation) on the mat, then keep the empty block in front of the cylinder and put back the cylinders into their sockets, for control of error.

- (b) Some activity like (a) but here hide the empty block from the child ask him to arrange the cylinders from thickest to thinnest.

After arranging them, bring the block and check it for control of error.

Memory Activity :

M₁ : Invite the child and ask him to bring the block and keep the cylinders together at a distance, so that child cannot see them. Keep the block at the place of presentation. Indicate a particular socket with an indicator and ask the child to bring the corresponding cylinder. Though he cannot see the cylinder visually he can, by using his memory, bring the corresponding for the particular socket.

This activity can be extended by asking the child to bring the cylinders one by one according to their successive gradation, corresponding to the sockets in the block.

M₂: Invite the child and ask him to bring the block and keep it between both of you. Then ask him to take out the cylinders and keep them in ten different places in the environment.

Keep the block at the place of presentation. Now indicate a particular socket and ask the child to bring the corresponding cylinder.

This activity can also be done in successive gradation as in M-1.

Check your Progress :

Q.1. *How many Blocks in Cylinder Blocks? Which one we offer first in a 'House of Children'.*

Ans. There are four Blocks in Cylinder blocks.

In a 'House of Children' we offer first 'B' block.

Q.2. *How many possibilities are there in cylinder blocks?*

Ans. There are 15 possibilities in cylinder blocks.

Q.3. *In a 'House of Children' why we avoid 'A' block for presentation?*

Ans. In 'A' block — the diameter of the cylinder are same, only differ in height. If a child make any mistake at the presentation time, he cannot rectify it by yourself, he need's other's help. So, in a 'House of Children' we never present 'A' block first.

Pink Tower

Material description :

It consists of 10 wooden cubes pink in colour. The cubes are graded uniformly with the smallest being a 1 cm cube and the largest is 10 cm cube, where each cubes have six square faces.

It is display on a stool of 20 cm height and the surface should be 14×14 cm.

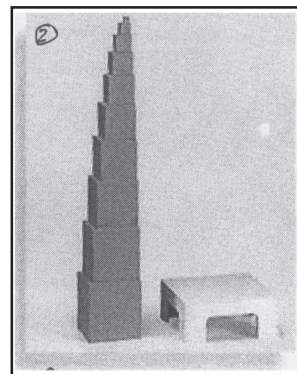
A thin long strip of wood, 10 cm long is fixed parallel to the one side of the surface and 2 cm away from the sides of the surface.

Presentation :

Take the child to the place where the pink tower is displayed and show him how to carry the cubes to the working mat.

Hold the cube such a manner that the thickness comes in between the thumb and the fingers of the right hand. The thumb will be placed that square phase which is nearer to you and other fingers opposite of that square phase where the thumb place.

By holding in this manner we will know the differences of the cube's thickness not only with our eyes but also with our muscular senses and it also helps us to refine his prehensile movements.



Muscular preparation is done before holding a thing. This movement which he prepared for hand before holding a thing which is called “Prehensile Movement”. Bring the cubes one at a time and keep it scattered on the mat in front of the child, so that all the cubes are visible and within his reach. Clear some space for “Building up” the cubes.

Find the largest cube and place it in the middle. Then try and find the next largest one amongst the remaining cubes and having found it, draw the child's attention to the way you try to place the cube on top of the first are in one intentional movement. Repeat the same movement till the whole tower is complete. When the child continues to repeat this activity, see that he does it with one intentional movement. After the tower has been built, inspect the tower from the base to the top. Let the child see that you are inspecting the regularity of placement of each cube.

Control of error : Lies in the child's visual sense

Direct Aim :

To help the child become conscious of the three linear dimensions; their variations and combinations, by means of his visual sense.

Indirect Aim :

- (1) To help the child refine his prehensile movement.
- (2) To help the child acquire greater control over his one intentional movements.

Age : 2½ years to 3 years of age.

Exercises

Ex. 1. : Invite the child and ask him to bring the cubes and make a tower. Then asks the child to close his eyes, and take out any cube and place it beside the tower. Now ask the child to find out from where the cube has been removed, by saying, “From where have I taken this cube?”

Ex. 2. : Ask the child to close his eyes and take out any cube and hide it. Then tell the child to open his eyes and ask him, “From where is the cube missing?” The child find out the proper place for the missing cube and then he can put back the cube at its proper place.

M₂ : M₂ can be done with all graded materials.

In Pink-tower, M₂ exercise is possible like cylinder block. Ask the child to keep the cubes in 10 different places in the environment and their ask him to build up the tower.

Foot Note :

Name-Lesson is possible with this material :

- (1) Ordinary Name-Lesson — “Small and Big”.
- (2) Name of Degree in Comparison — “Small and Smaller” or Big & Bigger.
- (3) Name of Superlative Degree — “Small, Smaller, Smallest” or “Big; Bigger; Biggest”

Check your Progress :

Q.1. How many cubes in ‘Pink Tower’?

Ans. There are ten cubes in ‘Pink Tower’.

Q.2. What type of activity we do with Pink Tower?

Ans. Grading activity.

Q.3. Why M₁ is not possible here but M₂ is possible?

Ans. For M₁, memory is not work here because all the cubes are kept in the same place.

But M₂ is possible in pink tower because it is graded material and ten cubes are kept in ten different places. So for making a tower memory will be work, to bringing the cubes.

Brown Stairs

Material description : Brown stairs consists of 10 square prismatic blocks of wood, Brown in colours. All these prisms share are of their dimension is common which is 20 cm.

Other dimension go from starting 1cm in the thinnest & 10 cm the thickest. Other dimension go on increasing by 1 cm.

Special stool is required to display the brown stairs.

This is 30 cm high. Length & breadth i.e. $24\text{cm} \times 59\text{ cm}$. Area of the surface of the stool is 24×59 sq. cm. Over the surface of the stool, 2 very narrow wooden strips 20cm long each making right angles one to the other and at the distance of 2 cm away from the 2 edges of the stool. The colour of the stool should be any colour which goes well with the brown-colour.

Characteristic of the material : (1) They are grading material. (2) They are according to mathematical succession. The volume of the stairs are $1 \times 1 \times 20$ Ca. Cm. $2 \times 2 \times 2$ Cm Cm etc. $10 \times 10 \times 20$ Ca-Cm i.e. $1^2, 2^2, 2^2, \dots, 10^2$.

They differ only in two dimension i.e. height & breadth ; because one dimension common. It is just like cylinder block. Here the difference of 2 dimensions is more stand out or more easily noticable.

Presentation : (IA—IP) : The activity will be done on working mat because there is plenty of space for scattered the stairs and arranges them.

Adult ask the child, “Are you like to show Brown stair ? Come.”

If the child agree, adult bring child to that place where the Brown-Stairs display.

The stairs are hold one at a time and use one hand. It hold at middle. When we separate from the other, we first move the lowest stair forward with two hands, hold at the two sides of the stair and then hold the stair at middle. Hold the stair between thumb and four fingers. By thus child grow its muscular sense, by the thickness of the stair. Child can understand the thickness by the distance of the thumb & fingers. His muscular sense also give a chance to appreciate the thickness of the different prism.

They should taken the Prism one at a time and scattered them on the working mat.

Here put the prisms not only scattered but also scattered in different— direction.

So that they are within the reach of the child’s eye and hand. No one side the other.

Then we clear same space for construction from right top to left base of the working-mat. Here I clear the space along the diagonal on the working mat of the adult’s and child for clear of construction.

Then I start to compare the square faces of the Prisms. After finding the thickest prism and put it diagonally. Find out the rest one and put it as near as possible to the first one

and use both hands at two sides to inspect the square faces are at the same line i.e. the sides are coincide. So that the child can understand the difference of dimensions, because here the lengths of the stairs are common. Now compair the thickest of square faces of the prisms which is put on the next are.

Here constructed the stair from thickest to thinnest.

When we present the activity to the child, we build the stair obliquely.

Point of Interest : (1) While building the stairs, to make sure the breaths of the prisms are coincide perfectly.

(2) No space there in between the prisms, while building the stairs.

Conrol of error : Lies inthe child's visual sense ; Consists on the examining of the regularity of the prisms.

Direct Aim : To help the child become consicous of the three linear dimensions, their variations and combinations by means of visual sense.

Indirect Aim : To help the child further refine his prehensile movements.

Age : When child 2½ years to 3 years. After the child have planty of experience of working with Pink-Tower.

Exercise : Same as Pink-towers.

Activity 2 □ Visual Sense

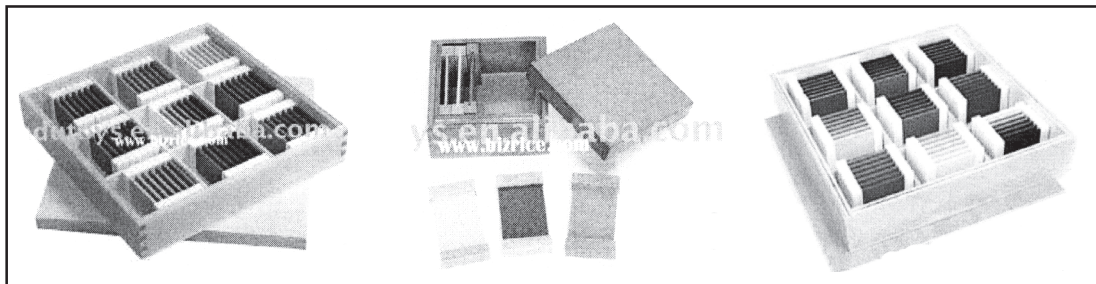
“Colour Tablets”

Material Description :

They are rectangular wooden tablets coloured all over both the edges and surfaces. Two shorter sides are fixed with good wooden strips with natural wood colour. These two strips help us to handle the tablets without touching the colour and these strips serve as protectors of colours.

There are three boxes of colour tablets.

1st Box : In the 1st box, we have tablets in RED, YELLOW and BLUE colour tablets, each in pair. They are primary colour.



2nd Box : In this box there are three primary colours i.e. Red, Yellow and Blue, and three secondary colours i.e. Green, Orange and Violet, three tertiary colours i.e. Brown, Gray and Pink and also white and Black. So there are eleven colour tablets each in pairs.

3rd Box : There are nine compartments and have nine colours graded according to their intensities.

1st row — Grades of primary colours.

2nd row — Grades of secondary colours.

3rd row — Grades of tertiary colours.

There are seven tables of each colour.

Presentation (I.A. – I.P.) :

With 1st Box

Invite the child and bring the box at the place of presentation and keep the box at the right side of adult. Ask the child to watch. Take out one colour tablet and hold the colour tablet within two frames, so that colour portion remain untouched. Draw the child's attention to it. Show him another tablet of second colour. Then third one also would be the same colour

of the second one. Then show him the tablet of third colour. Then keep the box in front of the child and take out last two tablets one at a time. If the child wants to take over encourage him. (Presentation should be in this manner — A, B, B, C, A, C or C, A)

After giving all the tablets ask the child to watch. Compare the tablets (their colour) and keep same colour tablets one beside the other making a pair keep different colour tablets one below the other.

Also show the child how to put back tablets in the box without any noise and without touching the colour.

Control of error : Lies in the child's visual sense

Direct Aim :

To help the child grow in consciousness with regard to colours and also help him to realise that the number of colours are limited where unlimited number of shades and intensities by means of his visual sense.

Indirect Aim :

To help the child prepare himself for intelligent and aesthetic appreciation and application of colours and also for symbolic purpose.

Presentation of 2nd Box

The presentation of this box is an extension of 1st box. Here the colours are more in number. We first give some suggestions to the child if it is needed. Scatter the tablets on the chowki or mat.

1. Make a vertical line with one set of tablets and scatter the other set and then make a pair.
2. Scatter all tablets and make pair.

2nd box we use for name-lesson and then bring whole box.

Presentation with 3rd Box

After the child knows the name of the colours from the 2nd box then we present 3rd box. Ask the child choose any one colour and then take out all the 7 shades of that colour on a tray.

Take the 4th one of the colour tablet and show it to the child and ask him, “What colour is this?” Then take the first one and ask the child though it is same colour but it is lighter than the previous one. Then take the 7th one and ask the child this is also the same colour but darker than the 4th one.

Ask him, we put the colour from left to right according to their darkness, i.e. dark to light.

Exercises of colour tablets

M_1 and M_2 activity is possible here like cylinder blocks.

Exercise with 3rd box :

- (a) After arranging the 7 graded tablets and ask the child “close your eyes”. Then adult pick up one of the tablet and putting the tablet in front of the child and ask him “open our eyes and from where the tablet coming from?”

Then child picks up the tablet and compares the tablet with the tablets and find out the exact place and puts the tablet there.

- (b) Ask the child, “close our eyes”, then pick up any one tablet and hide it. Then ask the child, “open your eyes and find out from where the tablet is missing?”

The child looks at the gradation of colour tablets and points out the place.

Check your Progress :

Q.1. How many box in colour tablet box?

Ans. There are three boxes in the colour tablet.

Q.2. How many colour in the 1st box? What they are?

Ans. In the 1st, there are three colours and they are Red, Yellow and Blue.

Q.3. In the 1st box, why there are Red, Yellow and Blue colour?

Ans. Because they are three basic colours.

Q.4. Why in the 2nd box have 11 colours?

Ans. By the help of 2nd box, child will learn 11 names of colour by name-lesson and these 11 colours are Primary, Secondary and Tertiary colours.

Q.5. Why we offer 3rd box?

Ans. It helps the child about the different shades of colours in gradation.

Activity 3 □ Tactile Sense

Finger Tips Bathing Activity

Material Description :

For the bathing finger tips, there have a largest tray, the floor of it is covered with oil-cloth and at the middle of tray there is a nice finger bowl with a indication mark at 3rd height. At the right side of this bowl, there is a Jug, blue in colour, with an indication mark. Just below the spout of the Jug and it will filled with cold water. There is another Jug pink in colour containing hot water and covered with lid and keep it behind the cold water. At the left base of the tray, we have a Turkish towel and at the left top corner have a piece of cotton. It is use if any water drop fell, then wipe.

Presentation :

This activity we done only when we needs to trace any material, e.g. TOUCH BOARD.

This activity will be done on a chowki. Invite the child and bring the materials bathing finger tips and keep it on a chowki. Ask him to unfold the napkin and keep it on left top corner of the tray. Now tell the child “you can see the indication mark in this thin bowl. Now pore cold water in it up to this indication mark”.

Then ask him to pour some hot water into the same bowl and tell him to feel whether the water has become a little warm.

When he feels the water has become warm enough, then tell him to bathe the finger tips of his right hand in this water. After bathing his finger tips, ask him to rub until his fingers being to tingle. Now ask him to throw the water of the bowl and put back the tray at its place.

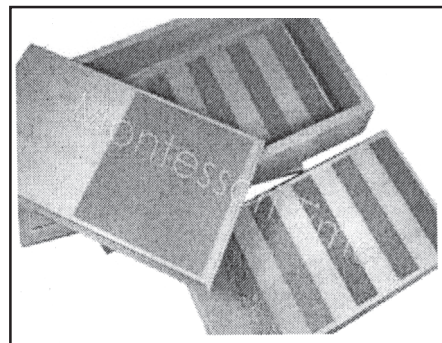
Touch Boards

Material Description :

It is a fixed part of the tactile material.

There are four touch boards. All the four boards have same dimension and same height, same weight. The four sides are slighting, so it is easy to hold.

1st Box : The first touch board — The surface of the board presents two types of textures. The left area of the surface present rough surface and other half smooth surface.



The second board : In the same box below this board we have a second touch board. In the second board, here we have five rough surfaces and five smooth surfaces alternatively. The left most is the rough surface and the right most is the smooth surface.

2nd Box : The third touch board is in this box and here one have five surfaces of graded roughness. The left most area is very rough. Thus the roughness ranges from rough to least rough.

In the same box below of this board, we have the fourth touch board which we have five surfaces of graded smoothness. It ranges from smooth to least smooth.

Presentation with 1st Touch board

Before this presentation, child must do finger tips bathing activity. Then ask the child to bring the touch board and show him how to hold the board, by placing the fingers of both hands below the board and the thumbs at the middle of the inclined edges without touching the surface. Keep it on the chowki and place the rough surface on your left. Hold the left base corner angle of the board. With the thumb and index finger making a 'L' type of shape so that it cannot move. Now show him how to trace the surface. When trace the surface, the hand is flat, fingers are together and thumb kept apart. The right elbow should be unsupported for it will make the movements easier. When tracing the rough surface pronounce the word, "ROUGH". After tracing the rough surface then trace smooth surface and pronounce the word "SMOOTH".

Let the child do the activity and tell him to trace the surface very lightly. Then suggest the child to close his eyes and trace and feel Rough and Smooth.

Presentation of 2nd Touch Board

Here we use only two finger tips for tracing the surfaces. First child do this activity with eye's open. Child touches two finger tips on the top of the rough surface and trace below and then touch top of the smooth surface and trace below. Child does it rapidly at the end of the board. Then offer the child to do it with eyes close.

After the use of 2nd touch board, child can use either 3rd or 4th touch board.

Presentation with 3rd Touch Board

Here we have one type of surface (i.e. rough) but in 5 degrees. We place the board on the chowki from roughness to more roughness. Child can understand the gradually

differences of roughness successively. Here the distance of the 5 degrees are not same as 2nd board; but child can control his muscular movement here. Child can manage the greater space. At first child do the activity with open eyes and later ask the child to do the activity with close eyes.

If the child make mistake motor distance and tactile sense control. If the child make tactile mistake, muscular sense control. If the movement are not regular then tactile sense help him to control. So, one control for other's mistake.

Control of error

No need for First Board. Second board lies in child's tactile movement. In the 3rd and 4th board tactile in perfection control by muscular and motor control by tactile sense.

Direct Aim :

To help the child to become conscious of roughness and smoothness and their various degrees by means of his tactile sense.

Indirect Aim :

To help the child to prepare himself indirectly for writing, drawing etc. by—

- (1) acquiring lightness of touch.
- (2) and also by acquiring the capacity to move his writing fingers in a control manner both in vertical direction as well as horizontal direction (left to right).

Age : Round about 3 years on as early as possible.

Check your Progress :

Q.1. Why we needs finger-tips bathing activity before presentation of any tactile material?

- Ans.** (a) After bathing finger tips, it will be more sensitive and finger tips will be clean.
(b) Develop his concentration power.
(c) Stimulate the child for the next activity.

Q.2. What is the Direct and Indirect aim of the Tactile materials?

Ans. See Direct and Indirect Aim.

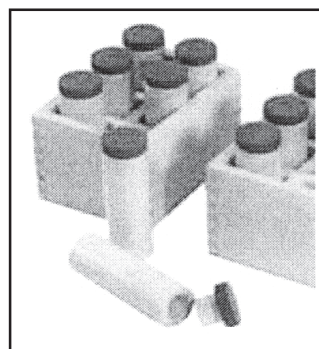
Activity 4 □ Acoustic Sense

Noise Boxes

Material Description :

There are two containers. In each of the containers there are six cylindrical wooden boxes. Their bodies are in the natural colour of wood, highly polished.

The tops and base of the boxes of one container are in blue and the boxes of other container are in red. The six boxes when shaken produce noises which are graded according to their pitch. Boxes of one container make pairs with boxes of other containers. We hold the boxes within our one hand to their breadth and when shake our wrist should loose.



Presentation :

The activity should be presented on working mat or chowki. Bring the boxes and keep them on the right hand side of the adult.

Take out the longest box and keep it in front of you and child. Draw the child's attention by saying, "Look how I hold it; when you hold it in the middle of the long part with your fingers on one side, and the thumb on the other side. But remember never hold it on top and bottom of the box.

Then shake the box with vertical movement and use only wrist and tell the child, "Look how I shake it?" Shake the box near your ear and hear the sound with intentness. Show the second box (softest sound). Ask him to hear the sound by himself. Again show the 3rd box (softest) and then show him 4th box (hardest) from the same container.

(Follow the method — A, B, B, A and in case of 3 pairs, A, B, B, C, A, C and C, A)

Again ask the child to watch. Keep the Blue and Red boxes in two places. Take one box from your right side. Shake one box & hear the sound and keep it. Take one box from your left, shake and hear the sound. If the sound of two boxes are same, keep them together. Again shake others and if the sounds are same, keep them together. Ask the child to hear the sounds shaking the boxes all by himself and also ask him to hear with other ear.

Continue the activity till the child takes over. Finally check up for the control of error.

Grading Activity with Noise Boxes

Presentation :

Ask the child to bring any one container. Ask him to take out all the boxes and keep them all mix-up.

Ask him to watch. Listen to one box and keep it. Listen to another box. Listen to the first box again. If it is louder, keep it at the left side of the first box. If it is softer then the first box keep it at right. Take another box and listen it. Listen to the first. Again listen to the third box. If the first one is louder than the third one, make a place between first and second. Listen the second. If the third one is softer then keep the second one in the vacant place and keep the third one in second place. Then listen another one and again listen previous boxes. Keep the box in its proper place. Do the same with other boxes and ask the child to hear the sound of the boxes one by one.

Ask the child to perform the activity again. After completing the activity ask him to listen the noise of each box separately for his control of error.

Control of error

As far as pairing activity is concerned it lies in the child's acoustic sense helped by his visual sense.

As far as grading activity is concerned it lies entirely an acoustic sense.

Direct Aim :

To help the child to become conscious of noises and the degrees of softness and loudness of noises.

Indirect Aim :

To help the child prepare himself indirectly for writing in two ways, by refining his wrist movements and by making him conscious of the sound of his spoken language, which is an indispensable preparation for writing.

To help the child overcome the unreasonable fears of noise and sounds, by making then interested in sound and noise and by investigating their meaning, direction source and distance.

Exercise

Name-Lesson is possible by this noise boxes.

Names are — "LOUD" AND "SOFT".

Check your Progress :

Q.1. Why we move our wrist vertically in Noise-box?

Ans. Indirectly it helps the child for writing by refining his wrist movement.

Q.2. Why we give loud by first?

Ans. Child is more acoustics with larger sound.

Activity 5 □ Muscular Sense

“Long-Stair”

Material Description :

There also consists of Ten prismatic wooden rods, red in colour. The height of each rod is 2.5 cms. They all materialise in one dimension and the length of the rods go on increasing gradually by 10 cm. Starting from 10 cm to the smallest to 100 cm the largest.

It materialise the natural number of mathematical succession i.e. 1, 2, 3 10.

Display :

A special stool wants to display the material. The height of the stool is 30 cm. The area of the surface of the stool is 104 cm × 29 cm. Two low thin stripes of wood, each 25 cm, making a right angle are should be fixed at the left side of the stool 2 cm away from third edge.

Presentation :

Invite the child and show the child these rods brought to the working mat.

Shortest one we take first. So that the square faces of the rod is between the two hands and at least 3 fingers on the square faces and thumb and little finger supporting it. Bring the rods one at a time kept in different directions and all mixed-up.

Now we clean the left top of the mat. We first search the tallest one and put it on the left top corner. Then the 2nd one which put in front of 1st one and make sure that the left square face is the same line (i.e. use our left hand palm for arrange same line of the edge). In this manner we continue till the stairs are build.

Control of error : Lies in the child visual sense

Direct Aim :

To help the child become conscious of the three linear dimensions, their variations, and combinations by means of visual sense.

Indirect aim :

- (1) To help the child acquire co-ordination over the large movements of his own body.

- (2) To help the child prepare for arithmetic by forming his sensorial base in appreciating natural succession of numbers.
- (3) Helps the child have a sensorial experience (visual and muscular) of the meter and its regular sub-division.

Age : 2½ to 3 years of age.

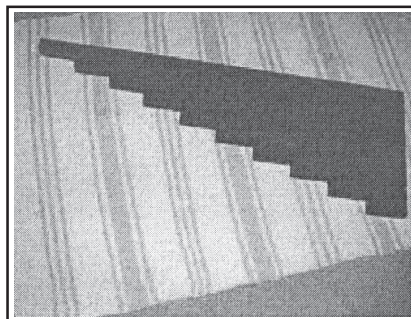
Exercise : In long-stairs — two exercise are possible like pink-tower.

Special Exercise with Long-Stairs

Ex. 1. : Bring the rods and arrange them in succession on the mat. Then put the big rod at the top of the mat and then put the 2nd largest rod near the previous one. Then child see a gap and search the rod which will fill-up the gap.

In this way child will do the activity.

Ex. 2. : Keep the longest on top of the mat and keep any one rod below the longest rod and make a gap. Child will search the proper rod which will fill up the gap.



In case of 5 no. rod, there is no other rod like 5. So this rod take double for fill-up the gap.

Ex. 3. :

- (a) Invite the child and bring all the rods and keep it succession on the mat. Isolate any one rod and then put any one next to it and fill up the gap. [Every time gap has been fill; put all the rods back to the circulation and continue].
- (b) Same as (a) but here keep the rods in scattered.

With Long Stairs 'Name-lessons' are possible here.

Names are —

- (1) Short and Long
- (2) Short-Shorter, Long-Longer.
- (3) Short-Sorter-Shortest
Long-Longer-Longest.

Check your Progress

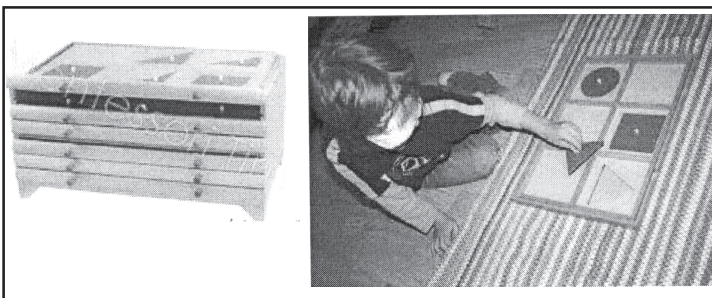
Q.1.

Ans.

Geometrical Cabinet with Geometrical Tray

Material Description :

In a geometrical cabinet, there are six drawers with two knobs in each drawers. In the drawers there are geometrical inset. These insets are light blue in colour and cut out of square plaques of wood. The plaques in which these figures are fixed. The measurement of the plaques are $14\text{ cm} \times 14\text{ cm}$ and yellow in colour. In middle of each of these figures have a knob, identical like knob of cylinder blocks.



Floor of the drawer is also of the same blue colour as those of the figure.

Content of these drawers :

1st drawer : In the top most drawer we have a series of triangles (according to the sides and angles) :

(1) Equilateral triangle; (2) Isosceles triangle; (3) Scalene triangle; (4) Right angled triangle; (5) Acute angled triangle; (6) Obtuse angled triangle.

2nd drawer : In the 2nd drawer here we have a series of rectangular quadrilateral. One of the pairs of these rectangles is 10 cm and other goes decreasing from 10 cm to 5 cm.

3rd drawer : There are series of polygons. All the polygons are inscribed on 10 cm circle. The base of the polygons are parallel to the base of the frame. The polygons are pentagon, hexagon, heptagon, octagon, nonagon and decagon.

4th drawer : Here we have series of six circles, whose diameter ranges from 5 cm to 10 cm.

5th drawer : Here we have four figures. These four figures are fixed in these manner; one side with Trapezium and Trapezoid and other side with Rhombus and Parallelogram and the space between the figures filled with either plaques or wood.

6th drawer : Here we have four regular curvilinear figures.

One side with “Ellipse” & “Oval” and other side with “Curvilinear triangle” & “Rosette”. The space between the figures filled with either plaques or wood.

In addition with the cabinet, we also have a tray, which we call “Presentation Tray”.

Tray : This is a wooden tray whose dimension corresponds to flat of the drawers. In this tray we have three basic figures in the form of insets. The sides of the square; and triangles and the diameter of circles are all 10 cm. On the top of the board, there is a triangle between two entire plaque of wood. Below the row, is an entire plaque of wood between the square and circle.

There is a wooden framework attached to the back of tray by hinges. When closed by means of hooks and eye arrangement it keeps the frame immobile. This is the tray we are going to use for Presentation.

Presentation :

Presentation can be given on a mat or chowkie.

Invite the child and ask, “would you like to see some activity with geometrical cabinet”?

Then bring the presentation tray at the place of presentation.

Now say the child, “Pick up the figures from the board. The figures are hold like cylinder block and keep it on the mat as a scattered. Child does this. Now adult pick-up any figure (here circle) with left hand and say the child, “Watch, what I am doing”.

Then adult took the figure and put the index and middle finger’s tip of the right hand below the figure, and then tracing the figure as light as possible and say the child, “Watch”. He stops the tracing where he start and tracing the figure at clockwise direction.

Then adult invite the child to do the same. Child take the figure and trace the figure like adult. After tracing, child kept the figure on the mat. Then adult pick-up the figure and say the child, “Watch, in the board, which gap is fit for this figure.” Child search the board and indicate the gap which is fit for that figure.

Adult says, “Are you sure, it is for that? Please trace it feel that it is same as before figure.” Then adult show the child, how to trace the gap of the frame. Adult put same finger’s tip as the top of the figure of the frame and tracing anti-clockwise direction and stop where he start. Child do the same. Then child put back the figure on the gap of the frame. Then take another figure and do the same.

Here we use not only our visual sense but also our muscular sense. The muscular sense helps the child to understand the movement of the pattern.

Foot Note :

- (1) The child must be free to presented in the presentation tray; then child can free to do the activity with any one of the drawer.
- (2) He also free to use more than one drawer at a time.

Control of error

As far as tracing is concerned it lies in tactile sense.

As far as the activity is concerned it lies in the material.

Direct Aim :

To help the child become conscious of the fundamental geometrical shapes by means of his visual sense and also muscular sense and then conscious of shapes in general.

Indirect Aim :

- (1) To help the child to prepare himself for systemic study of plane geometry.
- (2) To help the child to prepare himself indirectly for writing and reading by further prehensile co-ordination of three writing fingers involved in holding a writing instrument.
- (3) His writing fingers acquire lightness of touch through practicing.
- (4) To help the child to acquire the motor capacity to trace and therefore be able to reproduce the well defined shapes of letters.
- (5) Also helps the child to develop muscular memory for shapes and visual memory for reading.

Round about 3 years of age.

Check your Progress

Q.1. Why do we present the presentation tray not the other tray in the geometric-cabinet?

Ans. In Presentation tray there are three basic figures.

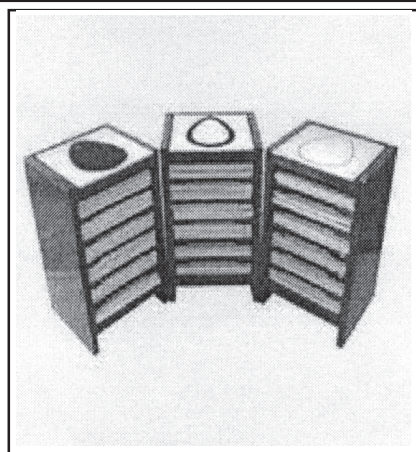
Geometrical Cards

Material Description :

There are three sets of cards. These cards are square in shape and 14cm × 14cm measurement. These cards reproduce all the figures found in geometrical insets and also all the figures found in the Geometrical Cabinet. The colour of the cards same as the colour for the Geometrical Insets i.e. Blue.

1st set : The 1st set of cards show the entire area of those figures with blue colour.

2nd set : The 2nd set of cards reproduce those figures as bounded by 1 cm wide outline.



3rd set : In the 3rd set of cards we found the imprints of same figures but as bounded by outline which is 1 mm narrow wide outline.

In each of the sets there are 6 groups of cards corresponds to found the Geometrical Insets.

So the 6 groups of cards are found in different compartment in the boxes which we have Geometric cards. The figures of geometry are drawing in the side of the geometrical cabinet, by seeing this drawing child can understand that which figures are in which compartment.

There are 3 boxes; which contain 6 cabinets.

Presentation : (I.A. – I.P.)

Invite the child to choose any one group of cards from the 1st set and invite the child to put them nicely on the working mat such that there are no space between the cards. Now ask the child, “To see this figure, bring the Geometrical Inset’s drawer where the figures are.” Then child take out all the figures from the drawer and he put back the empty drawer. Then adult says, “watch, what I am doing?”

Then adult takes any figure and compare with the card’s figure. When he reaches the conclusion regarding the identity of the figure and then keep the figure on the card with one intentional movement. Thus it is the pairing activity of the cards and the figure. Then take other figure and do the same.

Here if child makes any mistake then he understand the own mistake and correct it by himself.

In the same manner child does the activity with 2nd and 3rd set of cards.

Control of error : Lies in the child’s visual sense and help in the material.

Direct Aim :

To help the child associate the three dimensional representation of geometrical figures (Geometrical Inset) with the two dimensional representation (Geometrical Cards) for all practical purpose and thus move towards forming concepts of figures as areas bounded by lines.

Indirect Aim :

- (1) To help the child to prepare himself for systemic study of geometry.

- (2) To help the child prepare himself indirectly for reading by further developing for visual memory for shapes.

Age : Round about 3 years of age, after plenty of experience of geometrical insets.

Check your Progress :

Q.1. What is direct and indirect aim of Geometrical cards.

Ans. See Direct and Indirect aim.

Constructive Triangle

Material description : There are four boxes of constructive triangle.

First Box : It is a rectangular in shape. In this box are find— one pair of equilateral triangle, each of these have a narrow black line along are of its side and the colour of the triangle are yellow. **Two pairs of right angled isosceles triangles ; one pair green** having a black line on the hypotenuse & **one pair yellow** having black line one of its shorter side.

Three pairs of right angled. Scalene triangles ; **one pair** yellow in colour having black line along the shortest side. **One pair** gray having black line along the hypotenuse.

One pair green having black line along the longer Cathetus, **One obtuse angled scalene triangle red in colour** & having black line along its longest side.

One right angled scalene triangle (shorter than the former) **red** is colour having black line along the longer side which is equal to the longest side of the obtuse angled scalene triangle. These triangles are found arranged in an orderly manner but they should not kept in that manner they assumed after performing the activity correctly.

In the same box on the lid there are **all blue triangles without any black lines** along their sides.

There are **one pair** of each triangles. **One pair equilateral triangles ;** One pair right angled isosceles triangles ; and one pair right angled scalene triangles. There are also **one obtuse angled** scalene triangle and **one right angled Scalene triangle similar to the red triangles.**

Over the floor of the lid (reverse side) the different figures are printed which can be constructed with the triangles.

Along the shorter (outside) side of the box, a green dot and on the reverse side of the triangles there are the same green dot keep for the indication mark.

Second Box : It is an equilateral triangle in shape. In this box there have **one large gray equilateral triangle** without any black line. **Two identical** green right angled scalene triangle each having a black line along is longer cathetur.

Three yellow obtuse angled isosceles triangles each having black lines along the two equal sides.

We have **four small red equilateral triangles**. Here black lines of three of them for one side and one of them black lines in all sides for perimeter. (These four form equilateral triangle divided into quators by medials).

The shape of the 2nd Box is triangle. So it is triangular box.

If the fraction of a figure triangle ; which have been cut in minimum number figures ; we get again triangles.

There is a yellow **dot** in the wall of the 2nd box and yellow dot in the reverse side of the triangles of this box.

Third Box : There are 10 obtuse angled isosceles triangles; a third of large triangle in the 2nd box.

Two of them are red in colour with black lines along their largest side (which form rhombus).

Two of them are gray in colour with black lines along are of their equal sides. (We can form a parallebgram with joining the black lines and can also form reflex angle quadrilateral).

There are rest are yellow colour obtuse angled isosceles triangle. Three of them have black lines along their all the sides and rest three have black lines along their longest side.

Here we also have one large equilateral triangle— yellow in colour ; identical of the gray triangle in the 2nd box.

(This big equilateral triangle is half of a hexagon.)

On the reverse of each of the triangles in this box have a red dot & the same dot have also an the wall of the 3rd box.

The Fourth Box : Here we have fourth box. We callit quarter of fourth's. Here we have small eleven equilateral triangles.

(a) Two of them are red in colour. Each triangles have black live one of the sides. These triangles form Rhombus.

(b) Three of them are green in colour. Black lines are two sides of are triangle and two of them black lines have are side.

(c) Six triangles are there gray in colour. Each of them have black lines twoof its sides and they make a hexagen. This made by six quaters.

In the same box, we have six red obtuse angled isosceles triangle ; even there are quaters though they similar but they are not equivalent.

So here nice scope for the child to discover the all point of view ; the phenomenon.

See ; this black line here and another also. Then join the black line with opposite direction & say, “Look” then child said that “It is a square.”

1st easier phenomenon to discover the *Identical* in respect of all senses.

2nd easy phenomenon to discover the similarly.

3rd easy phenomenon to discover the equivalent.

Here also we have are entire yellow equilateral triangle in 4th box. No black line on it.

Blue dot have at the reverse of the all triangles & also on the wall of the box.

The dots help the child to know to which box it belongs and with the figure of different box be can make various discoveries.

Presentation with the 1st Box

(I.A.—I.P.) : The child who have a plenty of experience with geometrical Insets and started knowing the names of the figures then we present there constructive triangles. The child also know the names of quadrilaterals & hexagon. The child must be aware of the triangles and conscious of the triangle and discover that the triangle is the various constructor then he comes in conclusion by this triangle.

The activity should be performed on the working mat one at a time & keep them all mixed-up.

Tell him to hold the traingles along the sides and corners with his two hands. Ask him to take any one triangle (except Red). Then ask him to find out the triangle which is exactly the same. Then we explain to him, the same colour, shape & size. Ask him, let’s make sure

whether they are same by putting them together. Then ask the child to find out other triangles which are exactly same.

Then two red triangles are left which are not same in all point of view.

Tell him, “There are left only two triangles which are not same in shape & size but same in colour. So we put them to-gether.”

Then choose the two triangles which can make a square. Square is a familier shape to the child. So we choose these two triangles first. It is easier to recognise for a child. Draw his attention to the black lines of the triangles and ask him to put them in such a manner that the black lines will be together, not in the out-side of the figure.

Them tell him, “Look, it is a square.”

Then take other pairs ask him to make other figures in same manner. Always draw his attentions to the black-lines of the triangles. Then lastly draw his attention to the red pairs. Put them together which makes a trapizium.

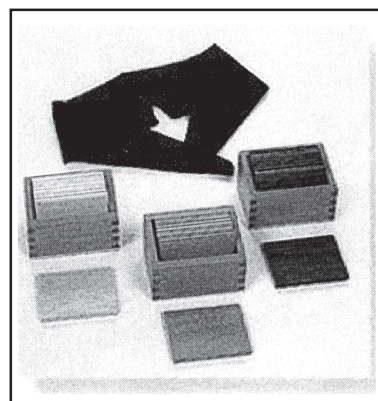
Every time the child taking & putting back the materials, he come accross the bue triangles. If he asks about them & if he want to see presentation, then we give him presentation with blue-triangles.

Presentation of Blue Triangle

(I.A.—I.P.) : Ask the child to bring the material & ask him to take out and mix-up all the Blue triangles. Ask the child, “Do you remember the figures first we made ? If you forget please look at the lid of the box, where the pictures have which we made first by the triangles of 1st Box. Look there are many other figures which we don’t make at the first time. Please make the figures using the triangles & make the new figures breaking the former figures.”

If the child cannot understand then show the figures painting with the different colours of the triangles of the 1st box ; at the reverse side of the lid. The child watch the painted figures & then he can make the figures without guiding by black lines.

If the child say that the painted figures are small & the triangles are so big ; then ask him first to make the figures using the multicoloured triangles. Then he understand the



activity. Then ask him to construct the figures using the blue triangles & ask him to make other figure breaking the former figure.

We do not present any other box to the child but we suggest to them to use the boxes and to see that every black line is used to put the triangles together. The child can manage the second, third and fourth boxes by himself and we can suggest to the child that no black line should be seen outside the figures constructed. When the child is ready to use all the boxes, then he can discover all the possibilities.

Control of error : No black line should be seen from the border of the figure constructed.

Direct Aim : To help the child to discover the function of the triangle as the construction & the divider.

Indirect Aim : To help the child prepare himself indirectly for the systematic study of plane geometry. (e.g. working with the constructive triangles help him to come across the geometrical phenomenon, identity, equivalence & similarity).

And also help him to consider figures from the point of areas and the concept of fraction.

Age of Presentation : Round about $3\frac{1}{2}$ years after the child have plenty of experience with geometrical insets.

“Baric Tablets”

Material Description :

We present baric tablets for Basic sense which are located in our muscle register.

We have 3 boxes for baric tablets. These three boxes are made of wood, in natural colour, rectangular in its shape. They are all highly polished and brightly varnished.

There are 10 tablets on each of the boxes. Each of the tablets in 1st Box; 12 gm weight and the 2nd box 18 gm weight and in the 3rd Box; 24 gm weight. The colour of the 1st box tablets are brown and the 3rd box are dark brown.

Presentation : (IA. – I.P.)

Adult and child goes to the place where the baric tablets are displayed. They bring two boxes i.e., 1st and 3rd.

The boxes are kept at the right of the adult.

Adult take one light baric tablet and say the child, “Will you feel the weight of the tablet?” If child agree then adult show him how it is put on the fingers which are spreads and how move the hand up and down slowly.

Then child spread his fingers and adult put the tablets on the finger and move the hand up and down slowly.

After moving it sometime, adult ask the child, “Let we take another tablet also on the other hand.”

Now adult show the child how two hands move at a time; just like balance i.e., one hand up and another down.

The adult take one baric tablet and put it on the other hand of the child. Child move two hands and feel the weight.

Child says, “One is light and other is heavy”. Adult ask the child, “Put down one tablet,” Suppose child put down light one; then adult give another heavy tablet on that vacant hand and say, “Move, as the same.”

Child do this and say, “Two are same weight.”

Adult say, “Sure; you are more sure; do this by exchange the tablets of two hands.”

Child do this and say, “I am sure; they are same weight.” Adult ask, “Keep them one upon other on the mat.”

Then adult give two light tablets of same & child do same activity and makes pair.

Here child use only four tablets. After that child can use all the tablets of 2 boxes.

Child also do this activity with eyes close.

Control of error : Lies on the visual sense

Direct Aim :

To help the child to become conscious of heaviness and lightness of weight by use of Baric Sense.

Indirect Aim :

Nothing particular.

Age : Around about 3½ years of age.

Foot Note :

With this material we give name-lesson as below :

Ordinary— light-heavy.

Comparative— light-lighter

or

heavy-heavier.

Superlative — light-lighter-lightest

or

heavy-heavier-heaviest.

Acknowledgements

I am particularly grateful to the under-mentioned books.

- (1) The Absorbent mind — Maria Montessori
- (2) The discovery of the child — Maria Montessori
- (3) Helping one helping all (1) — A.M. Joosten and S.R. Swamy

Paper-IV

Paper 4 A : Language Development

Contents

Drawing Insets

Unit 1 : Preliminary Activities of Sound Awareness

Unit 2 : Sand Paper Letter

Unit 3 : Movable Alphabet Box

Unit 4 : Reading and Writing Cards

DRAWING INSETS

Material description : The drawing insets are presented to give them an opportunity to apply their language. Which they have already acquired. Here the child can unify and consolidate all his motor preparations. Here the child actually uses the writing instrument. There are number of geometrical figures. There are frames in which the figures fit it. The dimension of the figures correspond to the figures of the geometrical insets. The figures are circle, ellipsoid, ovaloid, rosettee, triangle, square, rectangle, pentagon, curvilinear and Trapezium.

There is a tray which is divide into six to eight compartments each measuring 15cm × 15cm. There are papers in various colours measuring 14cm × 14cm. Each paper should be perfect square. There should six pads made of thick card board, size is 20×20 cm. There should be some coloured pencils in the stand.

Display : You can make a special piece of furniture to accommodate all these materials.

Presentation : The activity must be done as a chowkie. Invite the child by saying, “I shall show you something with colour pencils.” Ask the child to choose a pad, a piece of coloured paper and three pencils. Do not ask the child to choose the figure. You choose a figure. Put the figure with the frame on top of this paper and keep it on a chowkie. Then tell the child, “Now let’s go and get some pencils from the stand. Choose only three pencils of different colours.”

Ask the child to take one individual pencil stand. The pencil stand with the pencil should be at the right top corner of the chowkie.

Now adjust the paper carefully so that it is composite with the frame. No paper should be visible outside the frame, that is the criteria. Put the paper and the frame on the pad. Now take out the figure and show the child how to trace the frame. Start from the topmost

point placing the pencil vertically. The pencil should be straight and facing downwards. Trace the frame in anticlock direction. Stop tracing when you have reached the point from where you have started. Ask the child to lift the frame and see what he can see on the paper. Ask him to put the figure exactly on the boundaries which you have traced. Ask the child which colour pencil he wants to use. Then trace the figure with that pencil and then lift the figure. Draw the child's attention to the lines. The lines are even and equidistant. Tell the child, "We have now to use the pencil which we have not used. Show him how to fill the figure by starting from top on the inner figure. Using vertical lines. Starting from the top left and moving towards their right. The inner figure should be filled in with unbroken vertical lines from the top to the bottom. If the child wants to draw strokes he is free to do so.

If you find that the child cannot do it perfectly, then appreciate his efforts and give him positive suggestions.

Critic for perfection :

- (1) Two lines must be parallel and equidistant.
- (2) The lines with which you fill, must not cross the inner outline of the figure.
- (3) The lines must be vertical and therefore parallel.
- (4) The child's drawing line must be without any break.
- (5) The lines must be so close to are another that the colour of the paper does not show.
- (6) The lines should be such that entire inner figure is of an uniform shade.

Direct Aim : To give the child an opportunity to apply his developed concept of shape and of colour consciousness. Also to help him prepare himself for writing.

Indirect Aim : Prepare the child for drawing and painting.

Age of presentation : 3½ years to 4 years after the child has developed concept of colour and has had plenty of experience in sensorial activities.

Suggestions : (1) When the child has acquired some degree of perfection, permit him to take more then three colour pencils at a time.

(2) Once the child has acquired some degree of denterity over the vertical stroke, he can use any other stroke to do the shading.

(3) You can also provide papers to stimulate the children to draw any pattern which they wish.

Unit 1 □ Preliminary Activity of Sound Awareness

The teaching of Language to the child usually starts with the alphabets. But they are done in such a manner, that they can not help the child in speech. So the child can not achieve anything in the field of Language.

But one of the aim of Mantessori method is to help the child to develop what he achieved in past. So first we consider what assistance he needs to develop his achievement in the field.

Human beings most important conquest is to speak when he is a child of 2 years. So every child would love a possession in this field of Language.

Language is a spoken speech which is made with various sounds and reaches our intelligence in two ways. Through the ear we listen and speak with our mouth. The basis of learning spoken Language is firmly implanted in the child at a very early age, when his intelligence is building up and this process is entirely dependent on the environment. Thus the child has gifted by nature to acquire Language. It is through the child's capacity to learn and retain that we owe our speech today. Spoken Language is not an analysis of sounds but a total impression of many sounds. To achieve Language in both forms, written and spoken, the child is dependent on adults from whom he receives the sounds and later he produces these sounds in concrete form. After the age of two and a half years, while the child is still in embryonic period, he can build up his spoken Language (by hearing sounds). Spoken Language is not enough, so we have to materialise it through written Language. We have concrete letters which symbolise the different sounds in the environment — the collection of letters are called Alphabets.

The cave men of ancient times express himself by means of picture. Man try to express and convey his idea not only to the people who are in his environment, he also wants to convey his idea across the space and age. He wants to convey his ideas to the coming generation. Man felt the need to express, to fix the ideas of spoken language by means of signs.

The child is a human being, so he also will start to feel the need to express himself. He also needs to prepare himself for writing with the help of graphic arts.

(1) In a 'House of Children' child should enjoy the freedom to speak to consolidate his spoken language. So when the child comes to us, speak to us, then we receive him, that he gets spontaneous interest to speaking. This is actually stimulate him for speaking.

(2) We stimulate him by experiences. Experience will be so greater that child feels to urge to give expression of experiences in order to speak.

So every time we should to speak with him with some new thing, always telling new thing.

(3) We also help him by name-lesson, by which he can expressed himself by more satisfactory. So it helps him for vocabulary expression.

(4) For develop of his spoken language, child also needs good spoken language. It helps the child for spoken language in perfection. Child gets it from us.

So adult should be use words in careful minds. Sounds and throwing words will be polite and gentle. Never use any wrong words.

(5) We also do some narration of stories for children. We carefully choose the words and the manner so that the children want to repeat the story. So we use some language when we repeat the story.

(6) We also recite rhymes. It also helps him in he field of language.

From this he can habituated of sounding the difficult pronunciations. Child choose the difficulty of anything and he exercise for perfect this. So we choose beautiful rhymes.

(7) We should speak full sentence which is complex and composed of various group of words. He needs to analyse the sentences in various groups in relation to other groups and in relation to the verb. This activity is called analysing of sentences logically.

Our spoken language is composed of articulation of two sounds — Vowel and Consonants.

First the child uses two letter words as a means of exploring sounds of words in the environment. He also learns to break-up the words in separate sounds and he put them down in concrete form — that is writing. This method is called analysis of sounds.

Sounds are produced in our vocal chord and have to pass our lips which control the sound we utter. The child has to learn all the co-ordinated movements which are required to produce a single sound. The vowels are the most important, some consonants also have a single sound, but they are not very pure or clear as the vowels are.

We offer sand paper letters to the child as a symbol of sounds. He feels the master association with the help of his four organs. His eyes take the visual impression for reproducing it. Vocal chord pronounce the sounds and his ears hear the sounds to record it in mind and consciousness.

The child needs to become conscious of the structure of our spoken language specially of the sentences. In order to become conscious, he needs to analyse the sentence. It may be analysed in various ways into words, group of words around a verb. We call it grammatical analysis which deals with parts of speech. We help the child to enrich his language (vocabulary) on an even ascending level.

First the phonetic help is given with alphabets which are phonetically composed.

We offer vowel first — because;

- (1) They are pure sound. So it is easy to the child to pronounce them clearly.
- (2) There cannot be any single word without at least one vowel.
- (3) The number of the basic vowel sound is less than the number of the basic consonant sounds. So the child can become conscious with them much quicker. He also can distinguish among the sounds clearly. So the child can recognise them easily and spontaneously because they are few in number.

Check your Progress :

Q.1. What is Alphabets?

Ans. We have concrete letters which symbolise the different sounds in the environment — the collection of letters are called Alphabets.

Q.2. In a 'House of Children', why child needs freedom to speak?

Ans. It helps the child to consolidate his spoken language. He gets spontaneous interest to speaking. This is actually stimulate him for speaking.

Q.3. What are the two sounds that composed our spoken language?

Ans. The sounds are Vowel & Consonants.

Q.4. Why we offer Vowel first in a 'House of Children'?

- Ans.** (i) Vowels are pure sound.
- (ii) Not a single word without at least one vowel.
- (iii) Vowels are least in number i.e. five where as consonant are 21 in numbers.

Unit 2 □ Sand Paper Letters

Material Description :

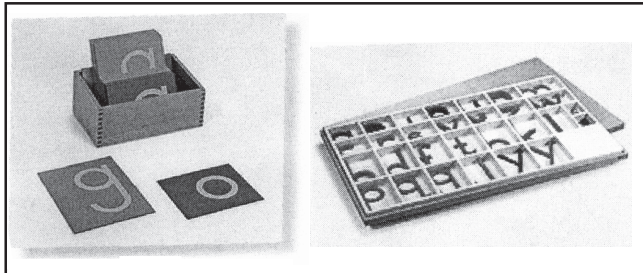
The letters are cut-out from sand paper and pasted on a plaques. In English we have 26 letters. The vowels are on the blue background and the consonants are on pink backgrounds. The letters are on the right side of the plaque. The dimension of the plaques depends on the dimension of the letters.

When we teaching the letters of the alphabet, we start with vowels and going on to the consonants, which are pronounced according to their sound. Among the vowels a, e, i, o, u, we start with 'a' sound which is familiar and interesting to the child.

Presentation of the activity : (I.A. – I.P.)

1st Part of the Presentation :

Invite the child and ask him to clear his finger tips by 'finger tips bathing activity'. Then say the child, "Come, today I show you a new activity with sand-paper letter : This activity will be done on chowkie. Please, go and bring a chowkie."



Then bring a letter (a) and keep it on chowkie and hold it with your entire left palm and trace it with the right hand only with your right index and middle fingers.

When tracing the letters, and at the end of the tracing the pronounce the sound clearly so that it helps the child to hear the sound of the letter.

2nd Part of the Presentation :

After tracing the letter ask the child, "I will tell you some words; Can you recognise the sound of the letter which are you trace?"

Tell him some familiar words like, RAT; CAT; FAN etc.

● Control of error :

As far as tracing and sound is concerned it is in the child's tactile sense.

Direct Aim :

To help the child become conscious of his spoken language.

Indirect Aim :

To help the child prepare himself directly for writing and reading.

Age of Presentation :

Between 3 and 3½ years.

● Presentation of Consonants**Presentation :**

In consonant, 17 sounds child needs to become conscious of his spoken language.

We never presents all of them at the same time and follows some rule to present them.

At the second stage — with some of the hard explosive sounds and at the third stage — with some of the soft explosive sounds.

The presentation will be the same as with the vowels.

We don't present c, j, q, x. Because 'c' is not always represent the same sound (क्) symbol and again we have another symbol (स्).

We don't present 'j', 'Q', 'X', which we have also two sounds. X (क्+स्); Q (क्+ड) etc.

The sounds are :

'b'	as	in	Tub (ब्)	Short	Explosive Sound
'd'	as	in	BED (ड्)	„	„
'g'	as	in	LEG (ग्)	„	„
'f'	as	in	PUFF (फ्)	„	„
'h'	as	in	MOHAN (ह्)	„	„
'l'	as	in	STILL (इल्)	„	„
'm'	as	in	RAM (म्)	Prolong	Sound
'n'	as	in	HEN (न्)	„	„
'v'	as	in	VAN (व्)	„	„
'y'	as	in	YELLOW (Prolonged ई)	„	„
'z'	as	in	LAZY (ज्झ)	„	„
's'	as	in	GLASS (स्)	Prolonged	Sound
'r'	as	in	RAT (र)	„	„

'k'	as	in	NAPKIN (क)	Hard	Explosive
'p'	as	in	POPCORN (प)	„	„
't'	as	in	CAT (ट)	„	„

● Control of error :

Social Control of error :

Direct Aim :

To help the child become conscious about his Spoken Language.

Indirect Aim :

It helps the child to prepare himself for writing :

- (a) by acquiring sound consciousness.
- (b) by getting to know symbol for the sounds.
- (c) by moment pattern involved in reproducing the shapes of the letters.
- (d) by his muscular memory.

Age : when child knows all the vowel sounds.

● Group Activity of Oral Phonetic Analysis (1st type)

Presentation :

When a group of children are familiar with two vowels, then we offer this interesting activity. We will have to keep two vowels (say a and i) on a stand at a distance.

Adult ask the child, "I am going to say some words and you have to tell me which sound you have heard. I shall ask one of you and the rest of you must remain silent."

Then adult then pronounces a word like Cat, Hat, Rat etc. and asks the child, "which sound do you hear, 'a' or 'i'?"

The child will say or show the letter. Interesting and familiar words should be given with the sound 'a' and 'i', but never given the word which are beginning with "a" or "i".

● Control of error :

Mostly in other children.

Direct aim :

- (i) It helps the child to become conscious about his spoken language.
- (ii) Stock of words are increasing.

(iii) Learning the difference between 'a' and 'i' sound.

Indirect aim :

It helps the child to prepare for writing by means of sound consciousness.

Age : 3½ years of age.

● **2nd type of group activity for oral phonetic analysis.**

Presentation :

With 10-12 children. Ask the children that I am going to say some words, all of you should listen carefully and find out the last sound of the word.

The child who is asked should give the answer, all others give answers by themselves.

Start with some prolongable sound; then with any sound e.g., PRAM; BOOK; BANANA etc.

● **3rd type of group activity for oral phonetic analysis.**

Presentation :

Invite 10-12 children and ask them to hear the very first sound of the words.

The words should be familiar and interesting noun but never give the words starting with 'ch' sound.

● **4th type of group activity for oral phonetic analysis :**

Presentation :

Invite 10-12 children. Ask one child to hear the first sound of the word and another child to hear the last sound of the word e.g., Pentagon; Popcorn etc.

After some time, we may ask the same child to hear the first and last sound of the same word, e.g., Hexagon.

After that go on asking the child to recognise several sounds in one of the same word.

Control of error :

Social control of error.

Check your Progress :

Q.1. How many parts of the presentation of sand-paper letter?

Ans. There are two parts of the presentation. 1st part we help the child to teach the sound of the letter.

2nd part we says same words where child can recognise that sound in the word.

Q.2. What are the direct and indirect of the sand-paper letter?

Ans. See Direct and Indirect Aim.

● **Movable Alphabet Box. (*Material Description) :**

In English there are two boxes and each box contains 5 rows of compartment. On top row there are 5 vowels (a,e,i,o,u). The letters of the alphabet identical in form and dimensions with those of sand paper letter, though here they are cut out of coloured cardboard. The letters are loose, which can be handled. The vowels are blue in colour and the consonants are in pink colour. The different letters are in different compartment. We have five copies of each letter. Each boxes we find out vowels and prolongable, hand, soft explosive consonants.

Introduction :

Thanks to 2nd, 3rd and 4th type of group activities, which helps the child particularly to recognise the sounds which he has not shown with letter and recognise 1st, last and several sounds in one and the same words. Then we help him to recognise every sounds of a word in succession.

Invitation :

Ask the child, “you have already recognise the 1st and last sound of the words. Are you like to see all the sounds in the words?”

There are something which can help you to recognise all the sounds in the words.

● **Presentation :**

Ask the child to bring the boxes on the working mat, when child knows at least four vowels and five to six consonants. Keep the box in front and pronounce the words like “Fan”, “Stamp” etc. Then ask the child, “what sound do you hear first when you say “Fan”. When child says ‘F’, then take out the letter ‘F’ from the box and put it in front of the child. Again repeat the word ‘Fan’ and ask the child “what sound do you hear after ‘F’ and go on giving words till the child takes over.

● **Control of error :**

It is in the adult’s ability.

Direct Aim :

It helps the child to become conscious about his spoken language by making so many words with the help of Movable Alphabets.

Indirect Aim :

It helps the child to prepare himself for writing by listening to all the sounds in a word.

Age : Round about 4 years of age.

Check your Progress :**Q.1. How many boxes in Movable Alphabet box?**

Ans. There are two boxes.

Q.2. What is the colour of vowels and what is the colour of consonant?

Ans. Vowels are blue in colour and consonant are pink in colour.

Q.3. When we offer Movable Alphabet boxes?

Ans. When child knows at least four vowels and five to six consonants and round about 4 years of age.

● Reading and Writing Cards**Picture Series**

When our child knows all the basic consonants then we offer picture series to the child.

Show the envelop, where we kept at least 10 pictures; because we want to finish each envelope in one sitting. Each of this picture suggest a familiar word which can be reproduce conventionally. If possible, let this picture classified in subject wise i.e. one set of picture about fruits; one set about animals etc. It helps the child to stimulate to know the another names of fruits and animals etc.

● Seven (7) Activities with ‘a’ and ‘e’**1st help :**

Ask the child to trace the sand paper letter ‘a’; then give ‘e’ and said to trace it. So this is ‘a’ and this is ‘e’. The adult will say as usual — give me ‘a’; where is ‘e’ trace ‘e’, show ‘a’ to them etc. So many interesting commands. Then Adult say, “So this is?” Child says — ‘a’ and “This is” — child say ‘e’.

2nd help :

Now another special form of help to distinguish similar sounds i.e. Group activity of oral phonetic analysis (1st type).

Ask the children — showing ‘a’ and ‘e’, “Remember, what is these? Child says, “yes, ‘a’ and ‘e’”.

Then adult will say “Now I am going to say words — you should listen carefully. Whether you hear the sound ‘a’ or ‘e’. I ask one of you. She will answer and others will tell by himself.

e.g. ‘MAN’; ‘BED’

If the child cannot say the word don’t insert him. Let him say the sound. This is one of the most helpful activity. Children listen the words and recognise the sound which is ‘a’ or ‘e’.

3rd help :

“Sorting of Picture”

Invitation :

“Today I am going to show you something interesting with the picture cards.” This activity done on working mat. Now we can use also picture series.

In one envelope number IIA ‘e’ is written in blue and we have also a picture where we find the ‘e’, and we have also some another envelope of IIA ‘a’ and we have 10 to 12 pictures with names of basic vowels for each sound.

On the reverse of the picture we see the letter written in blue.

Presentation :

Adult — “What picture you see here?”

Child — ‘BED’.

Adult — “Now, when you say ‘BED’, you hear the sound ‘e’; don’t you? There are so many pictures in this envelope and their names you hear the sound with “e”.

Look — HEN; RED; PEN etc.

Again show him the envelope of 'a' and ask, "What's this picture show?"

Child — "BAT".

Adult — "We can hear the sound 'a' when we say 'BAT'. There are so many pictures in this envelope and we hear the 'a' sound in all the names of the pictures". Now we mixed-up all the pictures of the two envelopes.

Kept the empty envelopes of 'a' and 'e' two sides of the mat. Take any one picture; listen the name of the picture. Put the picture of 'a' sound under the 'a' envelope and put the picture of 'e' sound under the 'e'-envelope.

This is the "Shorting of Pictures". After doing this, then ask the child to turn all the pictures and see whether he put the right picture under the right envelope.

So here we have to describe two picture series.

4th help :

Invitation : "To-day I am going to show you new activity with picture cards. This activity will be done on working mat. Ask the child to bring the Movable Alphabet boxes.

Presentation :

Ask the child to take one envelope and listen the name of the pictures of the envelope, then he works with Movable Alphabet. Suppose, the child has taken the envelope of 'a' and the picture is 'MAT'. Then the child will have to analyse the name by saying 'M', 'a' & 't' and will have to put the letters from the movable alphabet box and keep the letters by the side of the picture.

5th help :

Here, child take one envelope at a time and put the sound 'a' or 'e' only over the picture.

Presentation :

Child bring any one picture series (here 'a') and arrange of all the pictures in one vertical line on the working mat. Then bring the box of Movable alphabet box.

Adult — To show first picture and ask the child, "What is this?"

Child — "MAT"

Adult — "What sound you hear 'a' or 'e'?"

Child — ‘a’

Adult — Put ‘a’ at the side of the picture.

Child do this.

Adult — ‘Listen all the names of the picture and put the sound only, which you hear, ‘a’ or ‘e’?’

Child finish the work and then he bring another envelope and done the work in same manner.

Here child work one envelope at a time and put only one sound ‘a’ or ‘e’, at the side of the picture.

6th help :

Here we suggest that the child bring both the pictures series at a time and mixed-up all the picture of two envelope.

Arrange all the pictures one below other and listen whole words using with the Movable alphabet e.g. Picture ‘VAN’.

Child put all the sounds of the picture.

7th help :

Same as 5th help. Take two envelopes and mixed-up all the pictures of two envelopes. Pick-up one picture; listen the name of the picture and put only the sound which he hear i.e. either ‘a’ or ‘e’. He puts the sound at the side of the picture.

There are the seven forms of help which we offer to the child individually.

● “Phonogrammes”

There are three types of Phonogrammes :

- (1) ‘J’ : Single symbol represents a mixture of sound e.g. JAM, JUG, ‘JET’ and JUDGE; FRIDGE; BADGE
- (2) ‘SH’ : ‘TH’, ‘NG’ — Two letters for a single sound.
e.g. Ship; Shop; King; Ring etc.
- (3) ‘Ch’ : Two letter shows the combination of different sound ; e.g. Chop; Chun; Chin etc.

● Presentation of “Sh”

Invitation :

Today I am going to show you a new interesting activity with the picture cards. This activity will be done on a working mat.

Material description : ‘Sh’.

Over the envelope, at right top corner written the serial no. with ROMAN two and Capital B.

At the top of the envelope we see the sound ‘Sh’ are written. At the middle of the envelope a picture of ‘Fish’.

Presentation :

Bring the envelope and hold the envelope in this manner that the thumb is covering the sound of the envelope. This is the process of holding the envelope.

Adult showing the picture over the envelope and ask the child, “What picture is this?”

Child — “Fish”.

Adult — Do you hear ‘Sh’ when you say fish?

Child — No.

Adult — “I haven’t told you how to show ‘Sh’.

Taking away the thumb from over the ‘Sh’ of the envelope and say the child.

“These two letters ‘s’ and ‘h’, together we use to show ‘Sh’ sound.”

“In this envelope; there are so many picture where you can hear this sound ‘Sh’ e.g. shop; shelf; brush; polish etc.

Arrange all the pictures one vertical line.

“Every time you say the names of the picture and hear the sound ‘Sh’. First listen the sound and then putting the letters using the movable alphabet boxes.

The other side of the picture, we find the phonograms ‘Sh’ and ‘Number’ of the series of the envelope.

Same way we present ‘Ch’, ‘Ng’, J etc.

● Writing

Our traditional belief is that before six years the child is not teachable for reading and writing. We teach them reading and writing simultaneously. So they have to remember the picture of the letter to draw them.

In a 'House of Children', writing is not directly taught, yet writing comes pretty early. Writing comes when child is about 4½ years of age and it comes in its true sense; true function — as a means of graphic self-expression. It comes explosively as any developmental achievement comes for inner development. So it appears spontaneously.

Writing as a means of graphic self expression is a complex activity consists of many components. We can distinguish two main components in it.

- (a) Motor technical component and
- (b) Intellectual component.

What are the various Motor-technical preparations?

It means one must have acquired technical mastery of the hand over the writing instrument.

What it consists of ?

It consists of prehensile Co-ordination involving in the writing instrument with necessary and sufficient firmness.

● Indirect Helps :

Various sensorial materials helps the child to acquire this co-ordination —

- (1) This technical mastery consists of prehensile co-ordination involving holding writing instrument with necessary and sufficient firmness.

Starting with cylinder blocks and later with geometrical Insets helps the child for holding writing instrument with necessary and sufficient firmness.

- (2) A light hand means moving the writing instrument over the writing surface lightly.

Any tactile material help him to acquire this capacity, to develop this capacity. This lightness of touch further develop when he tracing the figure of geometrical insets.

- (3) At the same time form the shake on hand i.e. agility of hand. Noise boxes; tracing the figures and frames of geometrical insets; all helps the child to acquire the agility of wrist movements.
- (4) It also means the capacity of the hands holding with writing instrument which is capable of moving in control manner, in horizontal direction and also to move within bound in vertical direction.

2nd touch board helps the child to movement of writing instrument along a horizontal and vertical direction within bound.

- (5) This light hand also means a capacity of hand to move along well-determine shapes. In particular geometrical insets — it also involved a well-determine muscular memory for shapes (i.e. capacity to remember movement pattern involved in reproducing well-determine shapes.)

All these preparation child finds when he performs sensorial activities. He finds indirect help from these material for writing on for Motor-technical mastery.

Direct help :

He acquire Motor-technical Mastery over the writing instrument directly from drawing insets. The potential capacity becomes actualise.

● What are the indirect and direct Intellectual preparations?

Indirect :

The child gets thee forms of helps from the First day of his 'House of Children', e.g.

- (1) Freedom of Speaking helps him for graphic self-expression.
- (2) Rich experiences which help him to feel the urge of expression.
- (3) Stimulation for speaking.
- (4) Pronunciation for sounds from various parts of mouth.
- (5) Name-lesson — All serves him as an indirect intellectual preparation for writing.

Direct Aim :

In order to be able to with alphabetic script one has to be aware of the facts that our spoken language is composed of articulation of sounds. He also needs to know the symbols for the sounds.

With the help of tracing the sand-paper letters, the child gets to know the symbols of sounds in enduring manner.

It also helps him to know how to guide his writing instrument to produce well-determined shapes.

● **Other Intellectual Preparations :**

The child must also have to recognise all sounds of a word in succession and reproduce the sounds with their symbols in the same succession.

With the help of movable alphabet he gets the full help to reproduce the sounds in succession.

So all these indirect and direct intellectual preparation are drawn together in fusion with the help of human need; when human being not only satisfied with vocal self-expression — he also needs graphic self-expression — the urge within him to do that work. Dr. Maria Montessori discovered that human being at 4½ years of age experience that urge to self-expression. He needs to express himself beyond the time and space. He also wants to think about something and to develop his thoughts and to keep records to that thoughts.

Then he needs a gentle explosion i.e. example of others writing in the environment — particularly the writing of other children.

● **Adult's duties to his child's urge :**

Adult's have many duties before the child begins to write :

The duties are :

- (1) To prepare; maintain and develop the environment.
- (2) To ensure that child finds freedom which he needs so.
- (3) To ensure all the indirect and direct Motor technical and Intellectual preparations with he needs.
- (4) We wait expectantly to receive that explosion as it needs to be received.

As a rule we have had all preparation of writing but if a child of 4½ years of age does not start writing, we should not be anxious. There is an individual variation of time. So we make allowance for this individual variation.

● **Direct Aim of Writing :**

To help the child become get familiar with certain non-alphabetic sound symbols which still have certain phonetic significance and thus to keep the child's indirect alive in graphic sound analysis.

Indirect Aim of Writing :

To help the child prepare himself writing conventionally and also prepare himself for reading.

Check your Progress :

Q.1. When we offer picture series?

Ans. When our child knows all the basic consonants then we offer picture series to the child.

Q.2. How many activities are there with 'a' and 'e' sounds?

Ans. There are seven activities with 'a' and 'e' sound.

Q.3. Say the names of activity with helps the child for holding writing instrument with necessary and sufficient firmness?

Ans. Cylinder blocks and Geometrical Insets.

Q.4. Which activity helps the child for moving the writing instrument over the writing surface lightly?

Ans. Any tactile material help him to acquire this capacity. The lightness of touch further develop which he tracing the figure of geometrical insets.

Acknowledgements :

I am particularly grateful to the under mentioned books :

- (1) The discovery of the child — Maria Montessori
- (2) The Absorbent mind — Maria Montessori
- (3) Helping one helping All (II) — A. M. Joosten.

Paper 4 B : Arithmetic

Contents

1. Number Rods
2. Sand Paper Figures
3. Number Rods and Cards
4. Spindle Boxes
5. 'O' Activity and Chit Game
6. Cards and Counters
7. Even and Odd
8. Special Exercises with Number Rods
9. Decimal System
 - (i) Bead Material and Card Material
 - (ii) Static Part and Dynamic Part
 - (iii) Parallel Exercise—(Addition Strip Board ; Multiplication Board ; Subtraction Strip Board; Division Board.
10. Traditional Names (From Eleven to Nineteen)
First Seguin Frame and Second Seguin Frame

1.1 Introduction

Concept of Arithmetic

Human beings always need to develop their culture. Language and mathematics are two media which help the human beings to develop their culture. So our child also needs language and mathematics for their development.

Every field of human culture e.g. Dance, Arts, Science, Painting, Music etc. needs mathematics because they are based on mathematics.

Mathematics is an abstract science and is called the science of sciences. It deals with observation, appreciation, evaluation and consideration of parts of things with precision.

It also helps to compare them precisely; to establish relation between things and entities e.g. when we observe things in their shape and dimension, it is called geometry.

We also consider things from a quantitative point of view and that is why we introduce arithmetic. So it is also a branch of mathematics, which compares things precisely from the quantitative point of view and establish relationships between things from quantitative point of view.

Though things are concrete, the instruments we use to evaluate quantitatively are abstract. It is less sensorial and more intelligence.

We can appreciate things, more or less, but we are not happy with it. We want to establish relationships between things from quantitative point of view with precision.

The basis of arithmetic is a standard unit of measurement. Anything can be unit, e.g. a table; a chair; a boy; a mango etc. It is abstract and it is more difficult to approach to the child. So in a 'House of Children' we first offer geometry and then arithmetic.

Child already hear the names 1, 2, 3 etc. from environment and he knows that they are something which are related to counting.

Dr. Maria Montessori called it — "Awaking of mathematical mind." From this stage onwards the child no longer happy. He needs more precedes.

He needs to compare quantitative things in precision.

It is the stage when we offer him counting i.e. measuring i.e. how many times of unit are needed to measure a thing.

Counting can be built on two different foundations depending on the nature of the entities.

5 meter sari is variable of meter i.e. unbroken multiple of meter. 5 pieces of chalks are loose, individual identical units i.e. arithmetic of groups.

● **Types of Counting :**

There are two types of counting i.e.

- (1) An unbroken multiple of units of entities in terms of which we want to evaluate things precisely — which are call "Arithmetic of variable".
- (2) The entities can be composed of loose, individual, identical (identical in any point of view) units — which we call "Arithmetic of groups".

If the entities are 'Arithmetical of variable" — there we measure it and if the entities are 'Arithmetic of groups' then we count it.

● House of Children :

In a 'House of Children' we start with Arithmetic of variable and when our child

- (i) have a clear concept of unit and their roles in counting.
- (ii) knows what is the relation between quantity of one and above one.
- (iii) knows the relation exists between the quantities in succession from 1 to 10.

Then he is ready from group counting or 'Arithmetic of Group'.

We use the material which is similar to long stairs and we call it 'NUMBER RODS'. The length of this rod materialises the natural succession of numbers and the relation that exists between the shortest and the longest rod.

● Number Rods :

Material Description :

The number rods consists of 10 rods. The shortest one is 10 cm long and red in colour. Other rods gradually increase by 10 cm with red and blue colour alternatively. So the longest rod is 100 cm and which is an arithmetical variable of the smallest rod.

Two types of counting we find out in No. rods because here we measure it and also count it by colour.

In a environment the Number rods are display on a stool, in a same manner like a long-stair.

Invitation : I hope that you have already worked with long stair. Look here we have another rods like long-stair and call it 'NUMBER RODS'.

Come, I will show you, how we work with this.

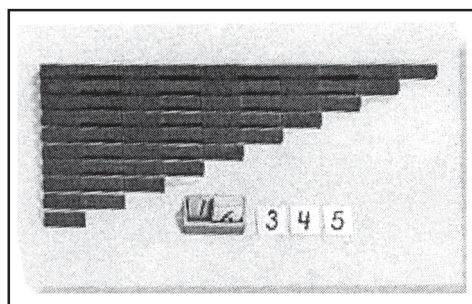
● Presentation of Number Rods :

Place of Presentation : "On Working Mat".

Presentation : (Individual Activity — Individual Presentation)

The child brings all the rods on the working mat; He hold the rods like long-stairs.

Adult helps the child to arrange the rods on the mat like long-stairs but red section of all the rods are in the left-hand side of the adult and with the left square face on the same line. The rods are also arranged in their successive order of length.



Ist period : The adult now takes the rod of 'ONE' and says to the child. "This is rod of ONE". "Look, this is rod of ONE". Next the adult takes the rod of 'TWO' and says to the child — "This is rod of Two", "Look, this is ONE, TWO."

The adult hold rod at the middle with the left hand and points out the section with two fingers of the right hand. "So, this is the rod of TWO". Next the adult takes the rod of THREE and says to the child — "This is the rod of THREE."

"Look, this is ONE-TWO-THREE, So this is rod of THREE."

IInd Period : Now the adult asks the child various questions like these,

Adult — "Give me rod of '3'.

Show me rod of '2'

Hide rod of '3'.

Count rod of '2' etc.

At the conclusion of the above, the adult asks the child to put rod I here, then rod of 2 before rod of one and rod of 3 before it i.e. arrange the rods in succession.

III period : Now the adult asks the child some questions and child replies as follows :

Ad — Which rod is this?

Ch — 'One'

Ad — Which rod is this?

Ch — 'Two'

Ad — 'Count this'.

Ad — 'Which rod is this?'

Ch — 'Three'

Ad — Count this etc.

After these three names, the child needs another name-lesson for '4' and '5'.

Ist period : The adult ask the child to show the rod of '1'.

Ad — "This is"

Ch — "Rod of ONE"

Ad — 'This is"

Ch — "Rod of TWO"

Ad — Count this.

Ad — "This is"

Ch — "Count this."

Then adult takes the rod of '4' and says to the child, "This is rod of Four."

Now adult points out the section.

ONE, TWO and THREE and the child says, 1, 2, 3 and then adult say FOUR.

"So this is rod of FOUR."

Next in same manner adult says Rod of FIVE."

IInd period : Same as before.

III period : Same as before.

In this manner the adult give all the names of rods from ONE to TEN.

● **Control of error :**

The control of error lies in 3rd period.

● **Direct aim :**

- (1) To help the child associate the already familiar names of quantities from 1-10 whith the precise quantities they signify.
- (2) Helps the child to get to know the succession of natural number from 1-10.

Indirect aim :

- (1) To help the child have a clear concept of numerals.
- (2) To give the child a firm foundation for the decimal system of numbers.

Age of presentation : Around 3½ years of age.

Check your Progress :

Q.1. How many rods in Number rods?

What's the length of smallest are and the longest are?

Ans. There are Ten rods in Number rods.

The length of the smallest rods is 10 cm and longest one is 100 cm i.e. 1 meter.

Q.2. In number rods why we use Red and Blue colour?

Ans. These red and blue colour is primary colour and they are extremely contrast.

Q.3. How many period in name-lesson?

Ans. In name-lesson there are three periods.

1st period we say the names.

2nd period we give so many commands about that names.

3rd period is for confirmation. Adult ask about the names and child will confirm it.

● **Exercises of Number Rods :**

Exercise 1 :

Presentation : Arranges of the rods in succession away from the place of presentation.

Adult ask the child “Bring the rods of 5.”

Child bring the rod of 5 then adult ask the child to count the rod. The child count the rod of 5 and put back the rod at its place then repeat the activity.

Exercise 2 :

This exercise is same as Exercise 1 but in this case keep al the rods away from the presentation place in mixed-up.

Exercise 3 :

Same as Exercise 1 and 2 but here the adult asks the child “Bring 5” not rod of 5.

Memory Exercise : Is not possible here.

Direct and Indirect aim : Same as “Number Rods.”

● **“Sand-paper Figures” :**

Material description : In a box we have ten sand-paper figures which are pasted in middle of a rectangular boards which are blue in colour. A white line is drawn below each figure to help the child to realize the actual position of the figure. The figures are 0, 1 2, 3, 4, 5, 6, 7, 8, 9.

Place of presentation : ‘Chowkie.’

Invitation : “You have know all the name of numbers. Come today I show you how to write these numbers.”

● **Presentation :**

Before presentation child must do finger tips bathing activity.

Then child bring Number 1 and place it on the chowkie.

The adult ask the child “Look, how I hold this. Hold the figure with left index finger and thumb at left base corner.

Then adult slowly trace the number using the finger tips of he right index and middle finger. When doing the activity adult folds all other fingers and thumb in such a manner that the tracing is visible to the child.

When tracing the figure, the adult mentions the name of the Number and give some pauses and then repeat the tracing.

One day we present only one name.

When the adult presents ‘0’ then child asks, “What is 0?” Then the adult says, “It is nothing.

So Zero is nothing.

● **Control of error :**

If the child’s tracing is in an incorrect direction or if he associates the wrong number with the symbol, the control of error lies in the adult.

Direct aim : To help the child associate the already familiar names of quantities with their symbols by means of his visual, muscular acoustic sense and tactile sense.

Indirect aim : To help the child prepare himself directly for writing and reading by recognising the figures.

Age of presentation : 3½ years of age.

● **“Special Name-Lesson for Sand-paper Figures”**

In English 6 and 9 figures are similar in appearance, so we give special name-lesson.

Presentation : (I.A. – I.P.)

1st period : In a tray adult carry only these two figure 6 and 9, not whole box.

First adult keep figure 6 on chowkie — child says ...

“This is ... 6”.

Then adult keep another figure ‘9’ on Chowkie and child says, “This is 9”.

Adult ask the child to trace the figure.

2nd period :

Now adult says —

“This is ... 6”.

“This is ... 9”.

Then adult asks so many questions about 6 and 9 e.g.

Trace 6, put 6 here, trace 9 etc.

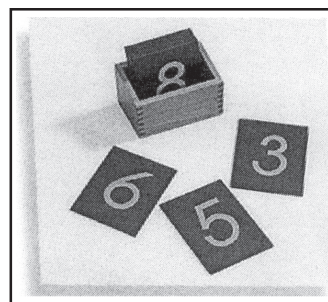
3rd period :

Here adult says —

“This is ... “ and

“This is ... “

The child responds and mentions the number.



Check your Progress :

Q.1. How many figures in sand-paper figure? What are the names of that figures?

Ans. There are ten figures.

The figures are ‘0’, ‘1’, ‘2’, ‘3’, ‘4’, ‘5’, ‘6’, ‘7’, ‘8’, ‘9’.

Q.2. Why we drawn white line below the figures?

Ans. It is an indication mark, child can understand by seeing the white line, which is the actual position of the figure.

Q.3. When we offer special Name-lesson?

Ans. When the objects are similar in appearance; similar sounding names, or both, similar in appearance and similar sounding names, then we offer special Name-lesson.

Q.4. Why we have only 0 to 9 figures in sand-paper figure box?

Ans. These 0 to 9 figures are basic numbers in our society because we can make any number by the help of these ten figures.

● “Number Rods and Number Cards”

Material description : In a box here are ten number cards i.e. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and it is displayed on the right side of the ‘Number Rods’. The base of all cards are

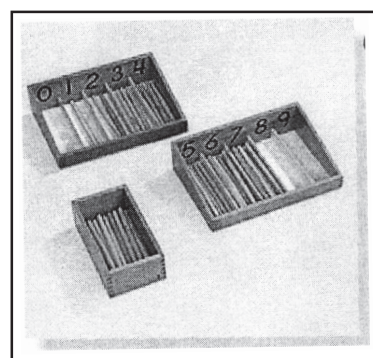
white and numbers are printed in black, without any indication mark below the numbers. In this box “Number 10” is a single card but there is no zero (0) card.

● Presentation :

(Individual Activity – Individual Presentation)

Invite the child and ask him to bring number rods and keep it on working mat in succession and then bring box of cards. The adult now picks up the card 1 and asks the child, “What is this?” The child says “1”. Then adult asks the child, “Where is the rod of 1?” Then child shows the rod of 1. Then adult asks the child to count rod of 1 and keep the card of 1 near the rod of 1.

Then adult pick-up card of 2 and asks the child to find out the rod of 2 and count it and then put this card of 2 near rod of 2 and repeat the activity upto the card of 9.



Then adult picks up the card of 10 and tells the child, “This is ... TEN”. The child says, “Why? This is 1 and 0”

The adult says, “Yes, this is 1 and 0 makes 10. So we count the rod of 10 and then keep this card 10 near the rod 10.

Then adult asks the child, “Look, how I put back the cards in succession.”

The adult takes first the card of 10, and keeps it one side of the mat, then card of 9 and so on. Till all the number cards are placed in succession.

Control of error : Lies in the child’s counting.

Direct aim : To help the child associate quantities from 1 to 10 with symbols by using the names of the quantity.

Indirect Aim : Same as “Number Rods”.

Age : 3½ yrs. of age and only after having completed tracing of sand paper figure and special name-lessons.

● Exercise

Exercise 1 : Bring the rods on working mat and keep it in succession. Then mix-up all the cards and keep it up-side down.

The child pick-up one card and see the number and then find-out that number of rods. Count that rod and keep the card at the side of that rod and repeat the activity.

After this activity, the child put back the cards like presentation.

Exercise 2 : Same as Exercise 1 but here cards are in succession but the rods are mix-up.

Exercise 3 : Same as Exercise 1 and 2 but here both cards and rods are mixed-up.

Check your progress :

Q.1. How many numbers in Number Card box?

Ans. There are ten cards i.e. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

● “Spindle Boxes”

Material description : There are two boxes without lids. Each box have five compartments. On the rear side of the 5 compartments of the 1st box, numbers from 0 to 4 are painted and on the 2nd Box the number 5 to 9 are painted.

Spindles are kept in each compartment according to the numbers are painted on that compartment.

The Spindles are fusiforms.

Display : Display these boxes on a chowkie.

Characteristics :

- (i) Quantities are in form of groups.
- (ii) Number of the spindles are arranged in succession.
- (iii) the role plays by ‘0’ as a symbol.

Place of presentation : ‘Working mat’ or ‘Chowkie’.

Invitation : “You know counting 1, 2, 3, ... with number rods. Come, I will show you another material for counting.”

“Look, this is Spindle Box. You carry this box at the place of presentation without any noise.”

● **Presentation : (I.A. – I.P.)**

Keep the Box 1 at the middle of the working mat and adult asks the child, “Watch, how I try to take out the spindle without any noise or as little noise as possible.”

The adult pushes the spindle against the rear end of the compartment with his right thumb and lifts it so that he can hold the spindle with his index, thumb and middle finger and slowly takes it out. Spindles are kept to the left of the adult.

After taking out all the spindles from the box, then adult tells the child, “Now watch how I put back the Spindle.”

The adult indicates the number 1 and says to the child, “Here is one, so I put one spindle here.” The adult picks up one spindle with the right hand index, thumb and middle fingers and places one end against the back wall and put it down slowly. So that there is as little noise as possible.

Next the adult tells the child, “Now watch, here is 2, so we put 2 spindles here.”

The adult puts one spindle in the compartment with the symbol 2 and after placing it he says ‘ONE’. Then he takes another Spindle and after placing he says, “This is another one, Now it is Two.”

Every child shows interest in ‘0’ and ask the adult, “Why is there no spindle?”

The adult asks the child, “What number is marked here?” The child says ‘0’. Adult says, “You know this is ‘0’ and ‘0’ means nothing. So there is no spindle here.”

After the child repeats the first box then he can use 2nd box and then he can use both the boxes together.

● **Control of error :**

Lies in the entire material. If a child makes a mistake in any one compartment, he can understand his error by himself.

Direct aim :

To help the child further consolidate—

- (i) his capacity to associate quantity with their symbols.
- (ii) his knowledge of succession of numbers.
- (iii) his ability to count.

Indirect aim :

To help the child —

- (i) realise that quantity above one can be made with the help of loose, individual identical units (they can be identical from any point of view).
- (ii) Pass from arithmetic of variable to arithmetic of groups.

Age : 3½ yrs. of age.

● “Zero Activity”

Presentation : Child here the sound ‘Nothing’, zero is nothing.

But that is not enough, they must feel what nothing is. For this purpose we employ exercises which amuse the child immensely. I place myself in the midst of them as they sit around in their little chairs; I turn to one who has already performed the counting exercise and say to him, “Come, dear, come to me zero times.”

The child almost always runs to me and then return to his place. “But my child, you have come once, and I said zero times.” He begins to wonder. “But what ought I to do then?” “Nothing, zero is nothing.” “But how do I do nothing?” “Do nothing; you must stay where you are, you must not move, you must not come any times; zero means no times.”

We repeat the exercise, “You dear, throw me zero kisses with your finger-tips.” “Clap zero times.” etc.

With these activities the children begin to realise the actual meaning of “zero”.

● Control of error :

To help the child, control of error is a social control of error.

Direct Aim : To help the child experience with his whole being, both intellectually and emotionally; that ‘0’ (zero) signifies absence of all quantities.

Indirect Aim : To help the child control his emotions by will effort directed by his intelligence.

Age : The child who shows interest about ‘0’ when working with spindle Boxes.

● Chit Game

Presentation : (Group Activity – Group presentation)

In a box, we have ten slips of paper on which a number from 0 to 9 are written and folded. In another small basket there are 45 little cowries. Invite the children to come one by one,

takes out a slip; carries it to his place, look at it stealthily, fold it again to hide the secret. Again we invite them to come one at a time and take the cowries corresponding at the number written on your slip.

The child with '0' written as his slip does not comes, because '0' means nothing.

The adult then check the number of cowries and number of slips are coincide or not. The activity being challenging can be repeated.

● **Control of error :**

Lies in the material.

Direct Aim : To give the child further opportunities to apply his ability in associating quantities with symbols.

Also further helps the child to consolidate his knowledge with regard to significance of 'zero'.

Indirect Aim : To help the child control his emotion by applying his will a directed by his intelligence.

Age of presentation : 3½ yrs. of age and have an experience with '0' activity.

Check your progress :

Q.1. Why we hold the spindle with three writing fingers?

Ans. It is directly helps the child for holding any writing instruments.

Q.2. Why '0' in the first box?

Ans. We give the presentation with first box and child can see that '0' means absence of all quantities.

Q.3. Say the names of the activity which helps the child to realise that '0' means absence of all quantities?

Ans. 'Zero' activity and 'Chit game'.

● **"Number Cards and Counters"**

Material Description : In a box, we have ten number cards from 1 to 10. In the same box there are 55 small attractive an identical objects called counters. This box is displayed next to the spindle boxes.

Place : Working mat.

Presentation : (I.A. – I.P.)

Ask the child to bring the box and mixed up all the cards on the mat. Then adult asks the child, “Keep all the cards one after another from 1 to 10 and keep some space between the cards.” The child puts ‘1’ then adult ask the child, “What comes after 1” keep this here.” The child keeps ‘2’ and so on.

After placing all the cards, the adult checks up the sequence of the cards. Now adult asks the child, “We have put these counters below these numbers. “So this is?” Child says ‘1’. Adult — “So we keep one counter below one.” In this way child does the activity. The child is free to arrange the counters in any design he wishes.

● Control of error :

Lies in the material and helps the child in counting and correcting the mistakes.

Direct Aim : To helps the child to further associate each symbol with its equivalent quantity from 1 to 10 and thus become aware of the names of the numerals in succession.

Indirect Aim : To help the child confirm to himself, indirectly that he knows the numbers in succession from 1 to 10 and can also associate correct quantities with their corresponding symbols.

“Even and Odd”

Presentation : Ask the child. “Keep the cards from 1 to 10 on the working mat in succession and keep the counters below the cards in rows of two or two together”. In between the two rows of counters there must be some space.”

We use an indicator and give name-lesson of “Even” and “Odd”.

1st period : The adult places the indicator between the rows of the counters and asks the child, “How many counters are on this side?” (e.g. pointing to the left). The child says “3”. Then adult asks, “And on that side (pointing to the right side)” The child says “3”. Then adult says, “So the number of counters on both sides of the indicator are equal. This is called on EVEN NUMBER. So 6 is an EVEN NUMBER.

In this way adult helps the child to understand at least any three even numbers.

Then adult places the indicator between the rows of counters of an ODD NUMBER says 5, and asks the child, “How many counters on this side?” The child says “2” and how many counters of that side? Child says ‘3’.

The adult then says, “So the number of counters of one side is ‘2’ and other side is ‘3’. So both the sides, the number of counters are not same. This is called ‘ODD NUMBER’. So ‘5’ is an ‘ODD NUMBER’.

In this way adult helps the child to understand at least any three ODD NUMBERS.

II Period : Adult asks the child so many question about ‘ODD’ and ‘EVEN’ number like this — “Count on EVEN NUBVER Counters.

Show me any ‘ODD NUMBER’ card. Give me any ODD NUMBER counters etc.

III Period : The adult asks the child, “What number is this?” This child says — ‘6’.

The adult asks, “What is 6? ‘ODD’ or ‘EVEN NUMBER?’”

Child says — “EVEN NUMBER”.

Adult — “What number is ‘3’?

‘EVEN’ or ‘ODD’

Child says — “ODD NUMBER”

● **Control of error :**

Lies in the IIIrd peiod.

Direct Aim : To helps the child to get to know the two names ‘ODD’ and ‘EVEN’.

Indirect Aim : To keep the child’s interest alive in working with number cards and counters.

Check your Progress :

Q.1. How many counters in “NUMBER CARDS AND COUNTES” Activity.

Ans. There are 55 Counters. The addition of 1 to 10 in 55.

Q.2. Why we offer ‘NUMBER CARDS AND COUNTERS’ activity?

Ans. Here child further associate both quantity and symbols and consolidate her knowledge about the Number from 1 to 10.

● **“Special Exercises with Number Rods”**

Exercise 1 :

Presentation : (I.A. – I.P.)

Child brings number rods and arranges them in succession on the working mat. Adult asks the child to bring rod of 10 in front of you and count it

Then adult ask the child to bring rod of 9, and keep it below rod of 10 and count it.

Then adult ask the child, "See a gap here, which rod will fill-up the gap? Count it."

Child : 'One'.

Then child bring rod of 1 and count it and then fill the gap.

Adult ask the child to count 9 and 1 together.

Adult : "So 9 and 1 together makes ten so $9+1 = 10$."

Then adult asks the child to bring the next longest rod and put it below the rod of 9 and count the rod.

Adult : "Which rod will fill-up the gap. Count the blank portion."

Child : "Rod of 2."

Child bring rod 2, count it and fill-up the gap.

So 8 and 2 together makes 10.

So $8+2 = 10$.

In this way child will do the activity. When the child puts the rod of 5 and needs another 5 to fill-up the gap, then adult suggest to put the rod of 5 again in the blank portion and say the child that if we take 5 two-times it also makes 10.

So $5 \times 2 = 10$.

Exercise 2 :

Same as above but here child first bring longest rod, then bring any one rod below the longest rod and then fill up the gaps

e.g. $3+7 = 10$

$1+9 = 10$ etc.

Exercise 3 :

Here ask the child to bring any one rod and keep it in front of the child. Then bring any other rod keep it below the rod and count it, then fill up the gaps and put back all the rods.

e.g. Rod 5

Rod $3+2 = 5$ etc.

Exercise 4 :

Here child can do all these exercise mentioned above by keeping all rods in scattered way.

Exercise 5 :

Here hide rod of 10. Adult ask the child to bring longest rod i.e. 9 in front of the child and count it. Then next longest rod keep it below the rod of 9 and count it, then fill up the gap.

So $8+1 = 9$

In this way do the activity. Again hide rod of 8 and do the activity.

● **“Subtraction”**

Presentation : The adult asks the child to bring the number rods and makes them equal to ten.

Then adult takes rod of one from (9+1) and asks the child, “How many numbers have I takes away?”

Child — ‘ONE’

Adult — “Now how many are left? Count it.

Child — ‘9’.

Adult : “First I have 10, and if I take one from ten then it is 9.

So $10 - 1 = 9$. This is call subtraction.

In this way child will do the activity.

In case of 5, adult asks the child “Here we make 10 by doubling the 5.

Now if we fold this 10, then we get 5. So $10 \div 2 = 5$ and this is called division.

● **Control of error :**

Lies in the child’s counting.

Direct Aim : To help the child to apply and consolidate all the knowledge which he has acquired from quantitative symbols from number 1 to 10.

Indirect Aim : To help the child to have a glimpse of arithmetical operation addition, subtraction special case of multiplication and division.

Age : 4 yrs. of age.

Check your Progress :

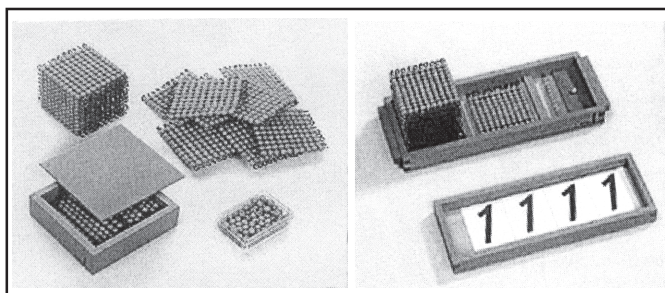
Q.1. Why we offer special Exercise with Number Rods?

Ans. The Exercises helps the child to learn Addition, Subtraction, Multiplication and Division.

● Decimal System (Static Part)

Golden Bead Material :

Material Description : A box with four compartments, whose rightmost shallow compartment have 9 golden beads for units and in the next compartment we have 9 bars of ten, on each bar compose of 10 beads.



In the next compartment we have 9 bars of hundred. Ten bars of 10 makes together form a Hundred and it is square shape.

In the last compartment, have a cube of THOUSAND makes by ten bars of hundred together.

Along with these we also have a tray with green bowl on it.

Purpose : This activity helps the child to become aware of the simple laws that governs the decimal system by his own active personal experience.

Name of the Activity : 'Name-Lesson'

Place : Working mat.

Invitation : "Come, today I show you a huge amount of beautiful materials."

(Child and Adult bring the material and Adult keeps the box on his right side with the unit compartment near his right hand side.)

● Presentation : (I.A. – I.P.)

1st Period :

The adult takes one bead keeps it near the right side of the mat and says to the child—

“Look, this is ONE”.

“This is ONE”.

Then adult shows the child one ten-beads bar and asks the child “How many beads are there? Count this.”

“Look, 1, 2, 9, 10.”

“So this is TEN.”

Then adult takes out a hundred and put it near the child and says, “Look, this is HUNDRED. There are so many tens are there. Count, how many tens in hundred?” Adult starts counting, “Count, 1 ten, 2 tens 10 tens.

So 10 tens makes Hundred.

So this is HUNDRED.”

Then adult takes out the cube of thousand and says to the child,

“Look this is”

Child, “What is this?”

Adult, “Are you like to hold it?”

Then adult gives the cube to the child’s hand from a distance. Child sees the cube and feel it.

Adult, “This is THOUSAND.”

“There are so many hundreds stacked into one. Now we count how many hundreds are there.” Adult takes the cube in his left hand and traces with right hand’s finger from the side of the top most hundred.

Adult traces the sides and says —

“ONE HUNDRED, TWO HUNDRED TEN HUNDRED.”

“So this is THOUSAND, 10 hundred makes a THOUSAND.”

Adult will arrange all the quantities from right to left, i.e. THOUSAND — HUNDRED — TEN — UNIT.

2nd Period :

Adult asks so many questions to the child like this;

“Show me 10, Give me thousand, Hide 100, Count how many tens in hundred, Count how many 100 in thousand, Count 10 etc.

Then adult arranges the quantities from right to left.

3rd Period :

Adult asks the child —

“What is this?”

Child — ‘ONE’

Adult — “What is this?”

Child — ‘TEN’

Adult — “Count, how many beads in ten.”

Adult — “What is this?”

Child — “HUNDRED”

Adult — “Count how many tens in HUNDRED.”

Adult — “What is this?”

Child — “THOUSAND”

Adult — “Count, how many hundreds in THOUSAND.”

● Arranging with the Golden bead Material

Presentation : Adult arranges the quantities from right to left, e.g. TH – H – T – U.

Then adult asks the child “Look, here we have one bead and there are so many beads in the box. Now we count how many beads are there.”

Child then count the beads like 2, 3, and keeps all beads in one vertical line and distance between two beads in equal to a bar of 10. After arranges 9 heads then child says, ‘there are no beads’.

Adult — “Suppose there is one more beads, then”

Child — “Then it will be 10”.

Adult — “Where is TEN?”

The child shows a ten bead bar.

Adult — “Look, there are so many tens in the box, count them and keeps it one vertical line.”

Child — Counts 1 ten, 2 tens, 3 tens 9 tens and put them in one vertical line.

Adult — “How man tens are there?”

Child — ‘9’

Adult — “Suppose there is one more ten then?”

Child — “Then it will be 10 tens.”

Adult — “What do we call 10 tens?”

Child — Ten tens are hundred.”

Adult — “Show me hundred.” Look there are so many hundreds in the box, you count and put them one vertical line.

Child will count one hundred, two hundred, upto nine hundred and keep them one vertical line.

Adult — “Suppose, there is one more hundred, then”

Child — Then it is 10 hundred.”

Adult — “What we calls ten hundred?”

Child — “THOUSAND”

Adult — “Where is thousand?”

Child — Show the thousand.

(The materials are displayed for presentation on the shorter side of the working mat).

● Formation of Quantity

Presentation :

After arranging the golden bead materials, the adult asks the child to bring a tray with green bowl and keep the bowl at the right base corner to the tray.

Then adult says to the child, "I shall ask you some quantity and you will give me that much of quantity from these beads."

Adult asks, "Give me 600 and you start to pick-up the beads from top." Child takes 6 hundred beads bar from top and comes to the adult.

Adult checks the number and asks him to put back the all bars.

Next adult asks the child, "Bring 1 thousand 2 hundred."

Child carries the beads and adult will check it and says put it back.

Then adult asks the child, "Bring 2".

Child — "2 of what? tens or hundred?"

Adult — "2 units and bring it in the green bowl."

Child — "What is unit?"

Adult — "Look, these loose beads are called unit. When I ask any number like, 2, 3 etc., then you should understand it is unit and bring it from loose beads and keep them in the green bowl."

Then adult asks the child, "Bring 1 thousand 3 hundred 3, i.e., combination of 3 hierarchy.

After that asks the child to bring combination of four hierarchy i.e., 1 thousand 3 hundred 4 tens and 1 and lastly asks the child to bring 1 thousand 9 hundred 9 tens and 9.

After checking the materials asks the child to put back the material in the box and asks the child, "How many beads are on the mat?"

Child says "Nothing".

This 3 activities help the child to have a clear idea about the unit of various hierarchies.

● **Control of error :**

- (1) In the 1st activity, "Name-lesson" control of error lies in the 3rd period.
- (2) In the 2nd activity, the control of error lies in the material.
- (3) In the 3rd activity, there is no need for control of error.

Direct Aim : To help the child enjoy handling large quantities within the framework of decimal system of numeration.

Indirect Aim : To help the child become aware of the laws of the decimal system of numeration by means of his personal activity, the Laws are :

- (1) There can be only 9 units in any one hierarchy.
- (2) The number of hierarchies on a level are limited to three : Unit, Tens and Hundred.
- (3) In the number of levels there are no limit on which these three hierarchies repeat themselves.
- (4) The ratio between the unit of one hierarchy and the unit of next higher hierarchy is 1 : 10.
- (5) The relation between one level to the next higher level is 1 : 1000.

Age : 4 yrs. of age and know the numbers of 1 to 10 and significance of '0'.

● Decimal System (Static Part)

Card Material

Material Description : Card materials are kept on a wooden box whose one of the walls is collapsible.

There are 9 cards i.e. 1 to 9 units. The numbers are written in green on white base.

Another 9 cards of ten (i.e. 10 to 90) which are as broad as unit card, but twice as long. The numbers are written in blue on white base, so blue colour stands for tens.

There are 9 cards of hundred which are as broad as unit card but three times longer. The numbers are written in red colour on white base, so red colour stands for hundred.

Along with these cards there is one card of thousand which is as broad as unit card but four times longer. The number is written in green as in unit cards because it is also a unit of the next higher level.

Display : In a box, first we keep thousand card then hundred card on it, in such a manner that they hide the three zeros of the thousand.

Ten number cards are placed on hundred by hiding two zeros of hundred. The unit cards are placed next to tens by hiding one zero of tens.

This card material is placed near the "Golden Bead Material".

Place — On working mat.

● **Presentation : (I.A. – I.P.)**

Asks the child to bring the box on the working mat and keep the box at the right side of the adult and also bring a tray.

1st Activity : Name-Lesson

Tell the child, “you have already hear the names ONE, TEN, HUNDRED AND THOUSAND. Come today I show you how to write these names”.

1st period :

Show the child card 1 and asks him, “What is this?”

Child says — “ONE”

Show the card ‘10’ and asks the child, “What is this?”

Child says, “TEN”.

Adult — “How many zeros are there in Ten?”

Child — ‘ONE’

Adult — “So this is TEN”.

Then adult sow the card of hundred and tells the child, “Look, this is HUNDRED.”

“Count how many zeros are there in 100?”

Child — “TWO”

Adult — “So this is HUNDRED.”

Showing the card of thousand and say the child, “This is THOUSAND.”

Count how many zeroes are there in the thousand.

Child — “THREE”

Adult — “So this is THOUSAND.”

2nd Period :

Adult asks so many various questions to the child. Like this —

“Show me Ten.”

“Keep thousand here.”

“Hide ten”

“Count how many zeroes in hundred.”

“Where is unit? etc.

Then arrange the cards like TH-H-T-U.

3rd Period :

Adult — “What is this?”

Child — “ONE”

Adult — “What is this?”

Child — “TEN”

Adult — “Count how many zero in TEN.”

Child — “HUNDRED”

Adult — “Count how many zeroes in HUNDRED.”

Child — “TWO”

Adult — “What is this?”

Child — “THOUSAND”

Adult — Count how many zeroes in THOUSAND.”

Child — “THREE”

At the same sitting, we give the 2nd activity.

● ‘Arranging the Cards’

Presentation :

Ask the child to arrange the cards one to thousand like, TH-H-T-U.

Show the child card ‘one’ and ask the child, “What is this?”

Child — “ONE”

Adult — Look there are more cards in the box. So we arrange all the cards in a vertical line.

We keeps the card one after another each card touching the other. Child will arrange all the cards upto 9. Adult ask the child, “What comes after 9?”

Child — “TEN” and child will show the card 10. Then adult says, “So this is one ten”.

“Look there are so many tens in the box. We put them one after another and says, one ten, two ten, three ten etc.

Adult — “What comes after 9 tens?”

Child — “Ten tens”.

Adult — Ten tens means one hundred. “Show me one hundred.”

Look there are so many hundred in the box. We arrange it like 1 hundred, 2 hundred upto 9 hundred.”

Then ask the child, “What comes after 9 hundred?”

Child says, “10 hundred”.

Adult — “So ten hundred is one thousand.

Ask the child to put back the cards in order in a stack but first show him how you put card 8 before 9 and so on. Then child can talk over.

● Name of the Activity : (3rd Activity) : “Formation”

Presentation : (I.A. – I.P.)

Ask the child to arrange all the cards on the working mat. Then asks the child to bring a tray and give me 400. But child brings four cards of hundred from top like golden bead materials.

Adult — “I ask you to bring 400, but you bring so many cards.”

Adult takes 100 card and hide two zeros of hundred and ask the child, “What is this?”

Child says, “This is ONE.”

Adult asks the child “Look, two zeroes are there. So this is one hundred, 2 with two zeroes i.e. 200. So 4 with two zeroes i.e. 400. So you keep this card only on the tray and put back other cards.

Then adult ask the child to bring the cards like combination of two hierarchies; then combination of three hierarchies and last combination of four hierarchies.

Then ask the child now look how I arrange the cards, — take thousand card first, then on top of it keep hundred card then ten card and then unit card, after that tape all the cards against zero and helps the child to say the numbers by showing the cards.

Lastly ask the child to bring 1 thousand, 9 hundred, 9 tens and 9 unit and then ask the child how many cards on the mat?

Child says — “So many”.

● **Control of error :**

Same as golden head materials.

Direct Aim : To help the child to enjoy handling graphic representation of quantities within the frame work of decimal system of numbers.

Indirect Aim : To help the child become aware of the laws governing the decimal system.

● **“Bead and Cards”**

1st Type : “Bring cards for quantities.

Adult asks the child to arrange the beads and cards on separate working mats.

The adult tells the child, “Bring a tray with green bowl and then I will give you same beads on the tray and you will count it and bring that amount of cards. Then adult check it and repeat the activity.

2nd Type : “Bring quantities for Cards”

Now adult gives the child some cards and child will read it and then bring that amount of Beads.

3rd type : “Bringing both for oral commands”

Adult ask the child, “Listen carefully, I will ask you some number, you will bring that number from both cards and beads.”

Suppose, adult ask the child to bring one thousand, three hundred, one ten and four.

The child bring that number from both beads and cards, then adult check the number and says “One thousand three hundred and fourteen.”

Child — “Why fourteen?” It is one ten and four.

Adult — “Yes, fourteen is the another name of one ten and four.” From this activity on words we use the Traditional *Names of Numbers* when we check the materials.

● **Control of error :**

Adult will inspect that both beads and cards are coincide or not.

Direct Aim :

To help the child in counting to enjoy handling large quantities and their graphic representation within the frame work of decimal system.

Indirect Aim :

- (1) Same as that of other activity of decimal system.
- (2) To help the child to get interested in the traditional names of combination of one ten and one to nine units, various groups of tens and combination of various groups of tens and one to nine units.

Check your Progress :**Q.1. Why in decimal system of Golden bead, material is called static? And Dynamic box — called Dynamic?**

Ans. In Golden bead material box, each compartment we have 9 unit. So we cannot change them from one hierarchy to another. That's why this Box is called static.

In Dynamic Box, each compartment we have 45 units. So we can change them from one hierarchy to another. That's why this box we called Dynamic.

Q.2. What are the Laws of Decimal System?

Ans. See the Indirect aim of Decimal System of Golden Material.

● Name of the Activity :

The decimal system. (Dynamic Part). Bead Materials & Card Materials.

Material description : There is a container with 45 golden beads. To the left of that container there are 45 tens in another container. In another container, there are 45 hundreds. They are symbolic hundred— on a square wooden plaque the 100 beads are printed in blue on an orange coloured paper.

We also have symbolic 9 thousands— 9 wooden cubes whose 6 faces are covered, with imprints of hundreds.

We also have card material just as the Cards of Static part only there are thousand Cards up to 9 thousands instead of 1 thousand.

We also have 3 sets of small cards. The figures printed on them are smaller and there are thousand cards up to 3 thousands.

We also have 3 independent natural coloured trays for the dynamic part with 3 green bowls. We also have a larger size green bowl.

Name of the Activity : The Change Game.

Material needs : All the golden bead material— 9 thousands, 45 hundreds 45 tens & 45 units (loose beads).

Presentation : (I.A.— I.P.) :

Invitation : “You have been worked with large quantity. I am sure that you also like to work with still larger quantity— Won’t you ?”

Ask him to showing the hundred that, “Now we have going to use this material as hundred. There are hundred heads are printed here. These are symbolic hundred.”

If he ask that,— “But I like the beads.”

Then say him that— “There are so many hundreds you see. But here is no space to keep all the bead hundreds.”

Now take out 3-4 thousands, & some hundreds, tens & units in a bowl. Mix-up all the thousands, hundreds & tens in a heap.

Ask the child— “Look what a huge quantity ! Do you have any idea that how much are there ?

Child say— “No”.

“Let’s find out how much we have, Now we are going to count all these quantities.”

“Which do you want to count first ?”

Child— “Thousand”

So you count thousands and put one on top of the other.

Again ask the child what he wants to count now ? If he says “Hundred”, Then short out all the hundreds from the heap.

Then count upto to ten hundred keeping them one top of the other. Ask the child— “We call 10 hundreds— one thousand.”

So you put these ten hundreds in the box back and take a thousand cube from the original box and put it on the top of the thousands cubes.

Ask the child, “Every time when we have ten hundreds, we have to change them into one thousand.”

Ask the child to count the remaining hundreds. There are 9 hundreds, so he can't change it.

Ask the child what does he want to count now.

Child says— "Ten."

Ask the child to count them. When he count upto ten, ask him, "Ten tens means—"

Child says— "One hundred."

So ask him to change them to one hundred and keep it on the hundred stack. Then there are 10 hundred. So ask The child to change them into thousand. "Ask the child to count the other tens. There are seven tens. So we can't change them.

Then ask the child to take the smaller bowl. Ask the child to count units & put then in the smaller bowl.

When he count upto ten then ask him to change then into + one ten :

After the child has done all the necessary counting and changing then ask him.

"How many quantity are there ?" Child count the quantity (i.e. thousand hundreds, tens and units).

Ask him to take the tray and bring the quantity in cards. When Chaking you say:

e.g. forty five instead of four tens and five.

If child asks you, say to the child, "We also call four tens and five in the same of fortyfive."

Ask the child to put back the materials in the box and make another heap & find out how much are there.

N.B. : Always keep some thousand, hundreds tens, in the box, so that the child can change whenever he wants to change.

Control of error : No need for control of error.

Direct Aim : To help the child enjoy handling still longer quantity and their graphic representation within the frame-work of decimal system.

Indirect Aim : (1) To help the child become familier with the mechanism of changing and thereby experiencing the dynamism within the frame-work of decimal system.

(2) To help the child experiencing the ordering effect of the application of laws of decimal system in clarity.

Age of presentation : About 4 years after he has enough experience working with decimal system static part.

● **Parallel Exercise over Addition**

Name of the Material : “Addition strip board.”

Material description : It is a rectangular wooden board grayish white in colour. On the board there is a frame-work of squares ; colour of the lines is blue. There are 12 horizontal rows and 18 squares in each rows. Over there 18 vertical rows of squares numbers are printed upto 18. 1 to 10 numbers written in red colour and 11 to 18 are in blue colour. After 10, there is a red line along the width of the board.

There are also 2 sets of wooden strips blue & red in colour. Width of the strips are corresponding to the width of the squares. There are 9 strips in each set. Their length correspond to the 1 to 9 squares of the board.

At the right end of the strips, number are printed in red on blue strips. The increasing of strips are seen from 1 to 9 and from left to right.

Other strips are red in colour. They are squared— number correspond to the strip of the square are printed on the right most square in blue.

Both are arranged in this manner so that blue strips are at the left of the red.

Presentation : (I.A.—I.P.) To the child who has experience asking with decimal system dynamic part golden head material.

Take the child to the material & introduce him with the material. Ask him to take out blue & red strips and tell him how to arrange 1 to 9 strips.

Tell the child— “This is addition strip board, so let’s do addition. We add 6 with 7.

The first number are always take from blue.

Put the strip on the first row of the board. It goes upto the 6th square.

Tell the child,— “We take the second number always with the red strips.”

Put it at the side of the blue strip.

Ask the child— “It goes to the square of—”

The child says— “Thirteen” “So $6+7$ is thirteen.”

Ask the child to keep back the strips and make another addition.

You should think for some time to stimulate the child., so that he himself ask numbers for addition.

If the child wants to keep the record of his activity then he can use the squared papers to write you also ask him to read out the activity like this— “Six plus seven is thirteen.”

Largest number in blue strip that is the strip of 9. e.g. to make 13.

The child should use— $9+4=13$

$$8+5=13$$

$$7+6=13$$

$$6+7=13$$

$$5+8=13$$

$$4+9=13$$

to make 15.

Now the child observe that certain combination repeats but in a reverse manner. It also helps to discover the commulative law of addition. He also reads the combination. So make some space between the numbers and draw the child’s attention to where the numbers are in a reverse manner.

Direct Aim : To help the child to concentrate on addition of two quantities from 1 to 9.

Indirect Aim : (1) To help the child get to know all the basic addition by heart.

(2) To help the child discover by personal experience the commulative law as it refers to addition and these realise that real basic additions are very limited in number (45 addition).

Age of Presentation : When he have had plenty of experience of working addition with decimal system dynamic part bead material and realistic the nature of operation by heart.

Control of error ! : When child work with addition strip board, then there is no need for any control of error.

Later when the child fills the sheets without any material help, at that stage he needs central of error.

Then there are various control which we use called CONTROL CHART.

Exercise 1 : Ask the child to take anyone number from the blue strip. Ask him to keep it on the board and ask him to add every red strip (from 1 to 9) with it, one at a time. e.g. he adds : $8+1=9$, $8+2=10$, $8+9=17$.

When the child to performing his first exercise, we draw his attention to **The printed addition table.**

Name of the activity : The printed addition table.

Material description : A tray with 9 compartments. There are printed tables of numbers from 1 to 9. On those printed tables there. are green compartments horizontally from 1 to 9. The first numbers are in green & the second numbers are in brown as black.

Suggest the child to do addition on this printed table. When he filled all the compartments of the printed table, then make a book of his own by punching than together.

Add Table of 1	Add table of 2	Add table of 9
$1+1=2$	$2+1=3$			$9+1=10$
$1+2=$	$2+2=$			$9+2=$
.....
$1+9=$	$2+9=$			$9+9=$

Exercise 2 : Ask the child— “There is something we do with addition strip board.”

Ask the child to bring the board. Ask him— “Let us try and find out that how many ways we can make any number using two numbers at a time— one from blue & one from red strip. e.g. “Take the number 15.”

Child can do the activity all by himself. He first take any are strip from blue then he try to find out the number from red strip which make 15.

Ask him not toput back the strips and ask him to take another number from blue strip and find out with which number of red strip it can make 15.

He see that he can do it in 4 ways.

$6+9=15$, $7+8=15$, $9+6=15$, $8+7=15$.

Suggest another number and ask the child to find out how many ways we can make the number.

Latter an suggest the child to start the activity by using the.

Name of the Material : “The Multiplication Board.”

Material description : On this Multiplication Board we are 100 of such pits. There are 10 horizontal rows of pits and 10 vertical rows. Over this 10 vertical rows, numbers are written from 1 to 10 in black colour.

Along the middle of the left side of the board, there a rectangular pit. It looks like a window. This is made for number cards, so that number can be visible.

Over the left top corner of the pit, there is a large circular pit also red in colour. Over it there is a red skittle.

There is a box an in it, there are 100 red beads. In the lid of the box there are 10 number cards 1 to 10. The numbers are painted in red. These numbers are painted at the right hand side of the card. The back ground of the card is white.

We use this number card to show the **Multiplicant**.

Numbers on the board are **Multiplier** & by the red beads,we show **product**.

Presentation : Invite the child and ask— “Look this is Multiplication with it.” We bring the board and box with lid.”

Tell the child, “See this is the multiplication board. (Pointing to the Board) and I show the cards and say, “See this numbers— you can multiply with these numbers on the board.”

Then I show the skittle is used to remember how many times you have to multiply?”

I keep the skittle over the red circle.

Now I ask the child to choose one of the cards to serve as multiplicants.

Suppose the child take out the card of 3. “Let’s put the card on the window. (The rectangular pit on the left hand ride of the board.).

“Let’s multiply 3 with 2.”

So we have to take 3 two times. We take the skittle and put it over 2. Now we take 3 red beads & arrange them below 1. and again take 3 beads & arrange then below 2 in vertical way. Then ask the child to count how many beads are all together. “Child counts & tell,” There are 6 beads.” So 3 taken two is 6.

In this way child may be multiplication at random like 3×4 , 3×5 , So on.

Then we suggest to multiply in a linear manner. I ask the child to chose any number, suppose 5. Child puts the card of 5 in the window then ask the child, “Now we multiply 5 with all the numbers of the board written on top.

So we keep the skittle over No. 1 That means time on (5) multiply are time. So put 5 beads below 1 and count and see 5 multiply by 1 is 5. Then he slips the skittle to the No. 2, that means he has to multiply 5. two times. So he put 5 more beads below the No. 2. The ask the child to count all the beads together. Child count and say 10. So 5×2 is 10.

Again I move the skittle over 3 means 5 to multiply by 3. So the child puts 5 more beads below number 3— and comit and find it is 15. So 5×3 is 15. Thus he continues doing this way upto 10.

When child wants to keep the record of multiplication, he has done, he use a printed tape like this (e.g. Multiplication tape of 2).

The frame work of this table surrounded by red line.

The multiplicand is written in red and other numbers in black. To the right blank place for the product to be filled up by the child.

Multiplication Table of 2

$$2 \times 1 = 2$$

$$2 \times 2 =$$

$$2 \times 3 =$$

$$2 \times 4 =$$

$$2 \times 5 =$$

$$2 \times 6 =$$

$$2 \times 7 =$$

$$2 \times 8 =$$

$$2 \times 9 =$$

$$2 \times 10 =$$

Control of error : Lier in the counting as long as the child is working with the Multiplication Board. When he starts to record the Multiplication without any material help— then we, give him the first control chart. Where he can see the 2 numbers and the product of them.

Direct Aim : To help the child concentrate as the product of numbers from 1 to 10.

Indirect Aim : (1) To help the child to realise that he knows the multiplication tables from 1 to 10 by heart.

(2) To help the child become familiar with the mechanism of Multiplying numbers by 10.

(When we multiply a number by 10, we actually don't do the multiplication— we just put a zero at the right side of the number. In other words we promote each digit of the number to the next higher hierarchy.

e.g. $426 \times 10 = 4260$.

Age of Presentation : After the decimal system of dynamic part.

Name of the Material : “Subtraction Strip Board.”

Material Description : The board is of same shape ; dimension ; colour & squarer with Addition Strip board. There are also 18 vertical and 12 rows of squares. Numbers are written on 18 vertical rows— Number from 1 to 9 is in blue & number 10 to 18 is red in colour.

The line along the width of the board is after 9 and colour of the transversal line is blue. There are a set of blue strip from 1 to 9 and another 17 strips correspond to the 1 to 17 squares of the board. They are of same colour as the surface of the board.

No numbers are written on 17 strips because they do not represent any quantity at all.

They are used to short the board according to quantity from which you subtract.

Presentation : (I.A.—I.P.) : Invite the child & say “Come, to-day I am introduce you with a new material with which you can do subtraction all by yourself.”

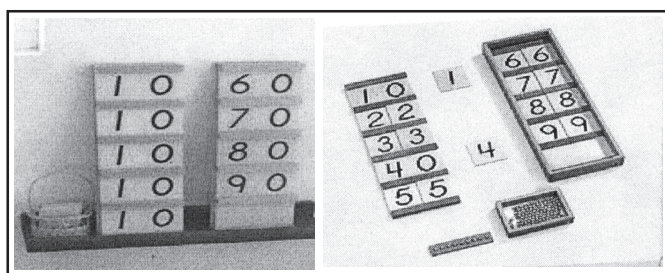
Presentation should be on a working mat.

Ask the child, “Look, this is a subtraction Strip board.”

Then you bring the material and suggest the child to arrange the strips.

Blue strips arrange same as addition stripboard & (1-17) strips are arranged at the left side of the blue strips.

Then ask the child—



“Let’s do subtraction. We subtract 4 from 18. So we take 4 from blue strip & put it below 18.”

It covers the numbers from right to left and difference are shown at the left.

Ask the child— “What is the number here ? (indicating the square of left of blue strip).”

Child see the number of the square which is at the left of the blue strip and said it is 14.”

“So the difference, is 14.”

After same subtractions done from 18. ask the child— “Let’s us subtract 8 from 15.

So you cover the numbers, 18, 17 & 16 with this strips (indicating to the natural coloured strips) & then put 8 from blue strip below 16.” Ask the child— “What is the difference ?” Child can see the board and say “7”.

Do save another subtraction with other numbers also and when he understand ask him to put back the material.

If he wants to keep the record of his activity he should use square sheet of paper— 5 square horizontally & vertically more than five.

Exercise : After he has done all the subtractions for some days, we ask him to concentrate on only those subtractions where the difference is only 9 or less than 9.

Ask the child— “You have been doing many subtraction, with subtraction Strip board. But we don’t need them all. So come, we shall do those subtractions which are need really.” “We subtract from 14. So we first prepare the board upto 14 using the natural colour strip. Cover 15, 16, 17, 18.” “We need only those subtraction where the difference is 9 or less than 9. When the difference goes only upto the blue line, then you will stop.”

“So you should begin to subtract with the largest strip 9 and then go on. When the difference is 9 & touch the blue line then we stop.”

“We don’t need the difference that goes after the blue line i.e. more than 9.

After he understand the nature of the activity, ask him to go on subtraction with any number but remind him to do only those subtraction where the difference are only 9 or less.

If the child want to keep the record of his activity, he has to use printed table. Tables upto 18. They are kept in a tray, like addition strip board but twice as broad as that board. Each of this table has a frame-work, numbers are in black & blue.

There are only 1 subtraction in 18. i.e. $18-9$; in 17, $17-9$; $17-9$; in 16 ; — $16-9$; $16-8$; $16-7$ etc. When the child does the subtraction without the help of the board & on the table ; he needs control of error. Then we offer him control chart.

Direct Aim : To help the child concentrate or basic subtraction.

Indirect Aim : To help the child gets to know subtraction by heart without having done so deliberately.

Age : After he has plenty of experience of doing subtraction with decimal system dynamic part & knows the nature of subtraction.

Name of the Material : The Division Board (Board of Unit)

Material Description : In a Box, there are 89 green beads and 9 green skittles on the lid on the box each of which represent an unit. On the board, there are 9 pits in each row and there are 9 such rows. There is green band over the board. Or it there are 9 larger pits where 1 to 9 are written.

At the side of the board No. 1 to 9 are printed vertically. The numbers are represents the quotients and the horizontal numbers are the divisions. There is also a green bowl.

Presentation : Tell the child, “There is also a board where you can do division all by yourself. Let us do the division.”

Ask the child, “Let us divide 36. So we take 36 beads in the green bowl.” When he has taken the beads tell him, “Let us put 9 skittle on the larger pit.” You can show him first by joins or putting the beads below the skittles. While putting the beads tell yourself are to you are to you etc.

Tell the child, “There is no more beads. So each skittle gets 4 beads.” No— “Let us divide 36 beads among 8 skittles. So take away are skittle & the beads below it.” Put the beads under the skittle once more.

There are only 4 beads. So tell the child, “I have only 4 beads. So I cannot give them to anybody.” And take them away and keep them in the bowl.

Then remain only 4 beads. So 4 is remainder.

Again ask the child, “Let us divide 36 beads among 7 skittles. So take away the 8th skittle and the beads, below it.”

Give the remaining beads to the skittles once more and there is only one left.

Tell the child, “So every skittle gets 5 and 1 in the remainder.” “Let us divide 36 among 6”. Child gives the remaining beads once more and say that on the board the beads look like a square. “Now let us divide 36 beads among 5”. Here quotient is 7 and remainder is 1. “Let us divide 36 by 4.”

The quotient is 9 and no remainder. “Now let us divide 36 among 3. Take a skittle is no place to give the beads once more. So we cannot divide 36 beads among 3 on this board.

If the child wants to keep the records of divisions, he can record them as the division table.

After a few days you suggest, “You do not need to record all the divisions. You need only those divisions which have no remainder.

e.g. in 36, we need only ($36 \div 9 = 4$; $36 \div 4 = 9$, $36 \div 6 = 6$) 3 divisions to be recorded.

Then he also realizes that the multiplications i.e. $9 \times 4 = 36$, $6 \times 6 = 36$, $4 \times 9 = 36$

Control of error : We do not suggest any control of error but if the child requires any he may use the Multiplication chart.

Direct Aim : To help the child concentrate all basic division and also helps the child to realize the relation between basic division and basic multiplication.

Indirect Aim : To help the child prepare himself for the use of division board of 10's and board of 100 for doing long division.

Age of presentation : After the child has had plenty of experience with decimal system of dynamic part and also knows the nature of division.

● “Traditional Names in Arithmetic”

In arithmetic, when child shows interest about these traditional names, then we offer it. Actually we start to saying the names at the 9th activity of decimal system of static part when adult check the material at that time he says traditional names.

There are 3 groups in traditional names :

- (1) Combination of one Ten and one to nine units i.e. (11-19).
- (2) Various groups of Tens i.e. (10, 20, 30 ...)

(3) Combination of various groups of tens and one to nine units i.e. (21-29, 31-39 ...).

Here we first helps the child to associate the names with quantities, then associate the names with symbols and after that associate the names both quantity and symbols.

1st Group : Combination of one ten and one to nine units.

Name of the activity : Name-Lesson (in English 11-19).

Material : 9 tens and 45 units of golden bead materials.

● **Presentation :**

1st Period : Ask the child to bring the materials. Showing one ten and ask the child, “Look, this is one Ten.” Then adult takes one bead and keep it at the side of one ten and ask the child, “This is one bead and now we count all the beads together.”

Touch the beads with finger and the child counts it like, one, two ten (child and adult together), Adult says ELEVEN.

“So one ten and one is also called ELEVEN.”

Again keep another ten and ask the child “What is this?”

Child says — “One ten.”

Keeping 2 beads at the side of ten, ask the child, “What is this?”

Child — “Two.”

Ask him to count all the beads together. Child starts to count, join with him at eleven and say “TWELVE”, after eleven.

“So, one ten and two is also called TWELVE”.

2nd Period : Ask the child various question like this —

“Where is TWELVE”.

“Put ELEVEN here”.

“Count TWELVE”.

Then ask the child, “Put eleven here”, “Put twelve here” etc.

3rd period : Adult — “What is this?”

Child — “ELEVEN”

Adult — “Count this”.

Adult — “What is this? Count this”.

Child — “TWELVE”.

(N.B. — English (11, 12); (13,14), (15,16), (17,18,19).

● “Name-Lesson with Symbols”

Material : “First frame of SEGUIN”

Material Description : It is a narrow rectangular frame whose length is divided into 5 compartments and breadth is divided into 2 compartments.

‘1’ is printed on the left most 5 compartments with black colour on white base and on right most 5 compartments ‘0’ is written.

Compartments are divided by wooden strips.

On the right half of the frame there are grooves, so that we can insert other cards into this.

On the 2nd part of the frame ‘1’ and ‘0’ are written on the first 4 compartments and 5 compartment is black.

There are also number cards from 1 to 9.

The dimension of the number cards corresponds to the compartments of the frame, so that they can cover the ‘0’ of the TEN.

Presentation : (I.A. – I.P.)

“Come today, I will show you how to write eleven, twelve etc. with the help of “Seguin Frame”.

1st Frame :

1st Period : Keep the 1st frame in front of the child and the box to the right side of adult. Ask the child, “What is written here?”

Child — “TEN”

Inserting card 1 into the groove of the 1st compartment and ask the child “What is this?”

Child — “ONE”.

Adult — “So one ten and one is called —

Child — “ELEVEN”

In this way show the child upto FIFTEEN.

2nd Period : Take out all the cards from the frame. Ask the child to make fifteen here (pointing any compartment) “Make twelve here”. etc.

Before winding up the 2nd period, ask the child to make the numbers 11 to 15 in succession.

3rd Period : In the 3rd period ask the child “What is this?” etc.

Ask him to say the names in succession.

● “Associating the Names both Quantities and Symbols”

Material : “Activity with first sequin frame. 9 tens and 45 golden beads.”

Presentation : Showing the frame tell the child, “Look, there are so many tens are written on the frame, so you keep 9 ten bead bars at the side of tens”.

Ask the child to insert ‘1’ over ‘0’ of the 1st frame. Then it is eleven. “So we put one bead near one ten bead bar at the top and make 11 and count all the beads”.

Then 2nd compartment and keeping 2 beads at the side of bar of ten, says, “TWELVE”.

In this way he completes the 1st frame and then he works with 2nd frame.

After making 19, he sees that there is one ten bar and nine units then he can imagine if there is one more bead, then it will be two tens.

Exercise with First Sequin Frame

Mixed up all the cards and keep it up-side down. Ask the child to take one card from the top and make the number with it by inserting the cards over the ‘0’ of the first compartment and makes the number with golden beads.

In the way child will done the activity with all the cards.

II Group

Names of Tens (i.e. 10, 20, 30 ... 90)

(a) Name associate with quantity.

● Name of the Activity : Name-Lesson

Material : A box 45 tens of golden beads.

Invitation : “Dear child, come with me, today I show you the another name of 2 tens, 3 tens ... etc.

Presentation : Keep one bar of ten in front of the child and asks him, “What is this?”

Child — “One ten”.

Adult — Keep two bar of tens below the first bar of ten and asks the child “How many tens are there?”

Child — “Two tens”

Adult — “2 tens we called TWENTY. So this is TWENTY.”

Then adult keep 3 tens of bar below the 2 tens of bar and ask the child, “How many tens are there?”

Child — “3 tens”.

Adult — “So 3 tens is called THIRTY. So this is THIRTY.”

2nd Period :

Asks various questions about these 3 names and then arrange the bar by commands like this, “Put 10 here, 20 here and 30 here.”

3rd Period :

Adult — “What is this?”

Child — “10”.

Adult — “What is this?”

Child — “TWENTY”.

Adult — Count how many tens in TWENTY etc.

Another day we give the other names i.e. (40, 50), (60, 70) and (80, 90).

● “Associate the names with Symbol”

Material : Box of cards from 10 to 90. Pointed with blue on white base.

Presentation : Name-Lesson

1st Period :

Put the card 10 in front of the child and ask “What is this?”

Child says “TEN”

Then adult keeps the card of twenty and ask the child, “What is this?”

Child says “TWO TENS.”

Adult — “TWO TENS we call TWENTY”. Similar way adult present upto 5 tens i.e. FIFTY.

2nd Period :

Asks various question about that 5 cards i.e. FIFTY.

3rd Period :

Adult asks the child and child confirm the 5 names.

(Next day Adult give the other names (i.e. 60 to 90) in same manner.

● **“Associate the names both quantity and symbols”**

Material : 45 bars of tens and cards 10 to 90.

Adult show the card of ten and ask the child, “What is this?”

Child — “TEN”

Adult ask the child, “So you keep this bar of ten at the left side of this card.” In this way child read all the cards & associate these with bar of tens and read the 2nd Group of tens in succession.

● **Traditional Names III Group**

Name of the Activity : Combination of various groups of tens and one to nine units.

Materials : First with twenty one to twentynine. Material needed 2 tens and one to nine units.

(a) Name associate with Quantity.

Presentation :

1st Period : Keep 2 bars of tens in front of the child, and ask him, “What is this?”

Child — “Twenty”.

Keep one bead at the side of twenty and ask “What is this?” (hide twenty with left hand’s palm).

Child — “ONE”.

Adult — “So twenty and one is twenty one”.

In this way child will read upto twenty nine.

2nd Period : Here give only two commands to the child like —

“Make 21, Count 21.”

“Make 25, count 25.” etc.

3rd Period : Adult makes the quantity and child confirm it.

(b) Associate the names with symbols.

Materials : With cards of twenty and one to nine unit cards.

Presentation : Same way : keep one to nine cards on the zero of the card twenty and make the numbers from 21 to 29.

Then do 2nd and 3rd period.

● **Associate the names both quantity and symbols together**

Material : Card of twenty and one to nine units and 2 tens golden bead bars and one to nine loose golden beads.

Presentation : Ask the child to make numbers with card and make the same quantity with beads at the side of the card.

After child knows the names 21 to 29, then we give the names 31 to 39. 41-49 and 91 to 99 in the same way.

When child knows the names upto 100, we should take the opportunity to count upto 100, whenever we get a chance.

● **“Second Seguin Frame”**

Material Description : 2nd Seguin frame same as 1st Seguin frame but here the numbers are pointed from 10 to 90.

There are also cards from 1 to 9 with this material.

Along with this, there are 9 tens and 9 loose golden beads are need for the activity.

Presentation : Ask the child to watch the first compartment where 10 is painted — insert 1 to 9 unit cards in the first compartment one by one and say the names and make the same quantity with beads on the mats.

Then ask the child to do the same with other compartments and ask him to make the same quantity with beads at the side of the compartment.

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