LOVELY PROFESSIONAL UNIVERSITY

DEVELOPMENT OF LEARNER AND TEACHING LEARNING PROCESS II

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SYLLABUS

Development of Learner and Teaching Learning Process - II

Objectives:

- To acquire knowledge about the diverse changes during various stages of human development.
- To acquaint themselves with the educational implications of various concepts of Psychology.
- To understand the nature and process of learning and the factors responsible for teaching-learning process.

Sr. No.	Content
1	Memory: meaning, types, factors influencing memory;Forgetting: Meaning, types and theories of forgetting; the trace decay theory, interface theory and repression theory
2	Individual differences: Meaning, types and their educational implications, Factors influencing individual differences, Personality: Meaning, nature types of Personality, Assessment of personality; Creativity: Meaning, concept and measurement;
3	Mental health: Meaning, definition, factors influencing mental health. Stress: Meaning, Types of stress and stress management strategies. Anxiety: Meaning, types & causes.
4	Adjustment: Concept, types and mechanism of adjustment; Adolescence: characteristics, problems, needs & aspirations; Behavioural problems: Concepts, some common behavioural problem of students, their preventive and remedial measures.
5	Attitude: Concept, factors influencing formation of attitude and measurement of attitude; Aptitude: Meaning, nature, classification and measurement of Aptitude; Psychology of thinking, reasoning and problem solving: meaning, nature and factors affecting thinking, reasoning and problem solving.

CONTENT

Unit 1: Memory 1
Dinesh Kumar, Lovely Professional University

Unit 2: Forgetting 8
Dinesh Kumar, Lovely Professional University

Unit 3: Individual Differences 17
Dinesh Kumar, Lovely Professional University

Unit 4: Factors affecting Individual differences 25
Kulwinder Pal, Lovely Professional University

Unit 5: Nature, Types and Development of Personality 28
Dinesh Kumar, Lovely Professional University

Unit 6: Measurement of Personality 36
Kulwinder Pal, Lovely Professional University

Unit 7: Creativity 43
Kulwinder Pal, Lovely Professional University

Unit 8: Mental health 53
Dinesh Kumar, Lovely Professional University

Unit 9: Meaning and Characteristics of Stress 59
Dinesh Kumar, Lovely Professional University

Unit 10: Anxiety 78
Kulwinder Pal, Lovely Professional University

Unit 11: Adjustment 86
Dinesh Kumar, Lovely Professional University

Unit 12: Adolescence 95
Dinesh Kumar, Lovely Professional University

Unit 13: Behavioral Problems 106
Dinesh Kumar, Lovely Professional University

Unit 14: Attitude 112
Dinesh Kumar, Lovely Professional University

Unit 15: Aptitude 149
Dinesh Kumar, Lovely Professional University

Unit 16: Thinking, Reasoning and Problem- Solving 155
Kulwinder Pal, Lovely Professional University

Notes

Unit-1: Memory

CONTENTS

Objectives

Introduction

1.1 Meaning and Definition of Memory

1.2 Factors of Memory

1.3 Characteristics of Good Memory

1.4 Kinds of Memory

1.5 Summary

1.6 Keywords

1.7 Review Questions

1.8 Further Readings

Objectives

After the study of this unit, students will be able to—

- Understand the meaning of memory.
- Introduced to the characteristics of good memory and the factors of memory.
- Be capable in obtaining the information of the kinds of memory.

Introduction

There is a great importance of memory in our day to day life. It is difficult for a man to move his life properly without memory. Whatever a man feels ever, that continues to collect in some form in his mind. The experiences, which are on the unconscious level of mind or are not conscious, they are called collected. And which comes on the level of conscious mind, they are called memory. According to the needs, these collected experiences help us in different situations. Memory helps us in the practical activities of life. If man could not remember his previous experiences, he would not have got so much progress today. Thus we can say that development and education is dependent on the tendency of collection of previous knowledge and experiences, good memory is needed for it. Especially intellectual work cannot be done in the absence of memory. Memory has an important place in the education. It is almost impossible to get knowledge without memory. So it is necessary to think in detail about the nature of memory.

Notes

1.1 Meaning and Definition of Memory

Memory is a mental process. With its help we bring our previous experiences, which are stored in our unconscious mind as mental instinct, into our current conscience. Many kinds of events happen in our daily life. If we see any place or things, get some experiences from them, which do not remain in the conscious mind forever but in the unconscious mind. The impressions of those experiences are marked in the mind. The process, of coming in the conscious mind of these experiences collected in the unconscious mind, is called memory. For example- Tajmahal is worth seeing among the different historical places in the Agra. I have seen it many years ago. Seeing it directly, an image that has been stored in my mind, that was on my unconscious level. Today when describing Tajmahal to my younger sister, the experiences which were collected on the unconscious level came into the conscious mind, it is memory.

The definitions of memory given by psychologists are following—

(1) Scout—"Memory is the ideal revival so far as ideal revival is merely reproductive in which the object of past experiences are reinstated as far as possible in the order and manner of their original occurrence."

(2) Woodworth—"Memory is the direct use of what is learned."

(3) Mc Dougall—Memory implies imagining of events as experienced in the past and recognizing them as belonging to one's own past experience."

(4) W. James—"Memory is the knowledge of past condition after being detached from the conscious or it is the knowledge of an event or fact, about which we have not thought till sometimes, along with we have to think this that we have thought or experienced about it before.''

(5) Nunn—"The power of collecting our experiences when connected with consciousness, we call it memory.''

(6) Ryburn—"After sometimes collecting our previous experiences and getting them, the power which we have for bringing them in the field of consciousness, that is called memory."

We can say on the basis of above definitions that memory is such a mental process by which collected or past experiences, due to need are again brought in the consciousness.

Notes Under the memory all learned or experienced things come. Thus memory is the process of awakening, make it living and memorizing the past experiences or thoughts.

1.2 Factors of Memory

Memory is a complicated mental process. According to Woodworth, four following factors are included in memory—

1. Learning
2. Retention
3. Recall
4. Recognition

(1) Learning—First it is necessary to learn for memorizing the content of anything. What is the process of learning and how does it happen? In this relation it has been described in the chapter related to learning. There is a close relation between learning and memorizing. We cannot remember anything without learning it very well and we can learn anything without remembering it. In order to learn any

Notes

lesson, a child repeats it again and again, understands it meaning and connects it with others lesson. In this process its traces falls on the mind. Thus remembering the learnt things from that lesson, he establishes association to the past knowledge with new knowledge. In this section of memory the rules of learning are followed completely.

(2) Retention—To remember anything is only to do retention of learnt things. The power of remembrance depends upon the power of retention. Retention is that power of mind by which we keep the learnt or remembered content in the mind. According to Woodworth- "Retention is such a situation in which everything, which is learnt, until it is repeated again, lies in it."

Did u know? When we learn any lesson carefully, mind is activated and during this process, this activity leaves enagrams, which is called 'Memory Trace'.

These traces are not destroyed. These are protected in the form of mental purification on the unconscious level. We can remember that learnt material till the memory traces are present in our mind. Retention is such a factor which can be proved by remembrance. We can remember those things again which we have retained in our mind. Thus remembrance depends upon retention and retention depends upon learning.

The factors influencing the retention-power—The factors influencing the retention power are following—

(a) Mind—Mental activities are influenced by mind. Memory traces are marked in the mind. The man whose mind is more developed, his memory traces are also more powerful, consequently, retention process is also affected due to personality differences means it is affected by less intelligence or more intelligence.

(b) Health—Retention power is also affected by health. The men who are not healthy, they cannot retain the learnt, seen or experienced things for a long time. For example, in the morning when we are not tired or we are healthier, at that time we learn any things immediately. So students are forced to do study or learning, after getting up early in the morning. So they can retain the learnt things very well.

(c) Interest—Whichever subject is learnt with interest and care. That remains in mind for a long time. For making the retention- power swift, teacher should pay attention for awakening interest of the child towards the subject.

(d) Rumination—Retention-power is also related to rumination. In whichever subject we are interested, we think about that subject. When we think about any problem, past experiences and learnt things are remembered soon. And mind absorbs them properly.

Favorable conditions of Retention—Psychologists have done many experiments related to favorable conditions of retention. The conclusion obtained from these experiments can be presented in the following form—

1. The period of stimulus is internally related to retention-power. The stimulus remaining in mind for a longer time can be absorbed in mind for longer.
2. It has been concluded from the study of **Lunt, Enbinghas** and **Croger**, that the favorable effect falls on the retention-power by more teaching. Within the definite period, the more child will be thought, the more he will assume.
3. Favorable effect falls of the speed of learning on the retention-power. Any subject that is learnt quickly it is retained with equal swiftness.
4. The effect of the health of child falls on retention-power. Healthy child can retain the learnt thing for a long time.

Notes

5. Whichever learning material is learnt with attention and interest remains in mind for a long time. Means attention and interest also favor the retention-power.
6. It is necessary for making retention powerful that memorizing materials are stimulating, fast, clear and meaningful. The more are these qualities in the stimulus, more will be the retention. These qualities provide favorable condition to retention.
7. Above learning method provides retention favorable conditions. as- retention is good and long in learning by the active method than passive method.
8. If we have more quantity of material. It throws a favorable conditioning effect on retention-power. Long time and hard work is taken in the learning of big content. More time and hard work makes retention-power strong. A child assembles the different parts of a big content looking into its essence rather than the small content. It helps in retention.
9. Some psychologists have concluded that sleeping after remembrance proves helpful in the form of favorable condition to the retention-power. During the time of remembrance if mind is diverted, hindrance comes in retention. But after learning any subject if child takes rest, memory traces get good opportunity for being powerful.

Task Tell on the basis of your own experiences, which is the better way to remember and to learn?

10. Experiences or content learnt for some purpose is stable in memory for long times. So, often it has been seen that the content learnt during the examination time is kept in mind for a long time, because the effect of purpose falls on it.

11. In the retention, past collected knowledge is more important. If content is not related to past collected knowledge, there is difficulty in retention. The mixture of past collected knowledge provides conditioning stage to retention.

12. Retention is also affected by feelings and emotional situations. The feeling of Suffering, pleasure, fear and hopelessness etc traces deep mark in the mind that is kept in mind for a long time. **B**ut this kind of educational situations cannot be developed for providing favoring condition to the retention.

(3) Recall—To bring the past experiences in consciousness is recall. The concepts which are marked on mind with the past experiences, they come on the level of consciousness by a recall. Recall depends on retention-power. If a child, after learning any lesson absorbs it in a proper way, he can remember it easily. "Recall is the mental process, by which we bring our past feelings in our consciousness without presented by any original stimulus.'' There are two kinds of recall- (a) Spontaneous (b) Deliberate. In the first kind there is no need of any kind of effort, they come on the level of consciousness itself according to the need. In the second type of recall, there is a need of effort. As in the examination hall, there is need of effort for the remembrance of the answer of the question in writing. Besides, the factors influencing the retention power there are some other factors that influence recall, which are following—

Self Assessment

Choose the correct alternative:

Who are the memory of the following definitions:

1. "Memory is the correct use of learnt things"—

   (a) Scout (b) Woodworth (c) William James

Notes

2. "The meaning of memory is to imagine the experiences of past events and recognize this fact that it is a past experience."

   (a) McDougall (b) William James (c) Woodworth

3. "Four factors have been included in memory."

   (a) McDougall (b) Nun (c) Wood worth

4. How many kinds of recall are there?

   (a) Two (b) Four (c) Six

(a) Emotional Stage—Emotional stage affects the process of recall. In the time of recall if a man is worried, fearful and nervous, he does not recall the well learnt or assumed things. For example in the examination hall, some times seeing the question paper, student does not answers some question, but coming out of the hall he remembers the answer of the question properly, because his retention power is good. Its reason was emotional stage. If a man is cheerful and healthy, he recalls things quickly.

(b) Mental Set—When a man is mentally prepared for learning any thing, he can recall more things. For example– in the examination times student reads or learns whichever subjects, he learns them successfully, because in the mind of student there is a mental tendency of learning the subject due to the examination, which helps him in recall.

(4) Recognition—Recognition is an important factor. According to **Woodworth**—"to know the past experiences is recognition, or to introduce that thing in the current time which we have been introduced in the past." For example, An adult man when sees his teacher after many years who taught him in the forth and fifth class, he recognize that "**he taught me maths**" Teacher also recognizes him by recall that 'he was the mischievous boy of the class. Thus association of ideas depends on the feelings of introduction.

1.3 Characteristics of Good Memory

Important qualities and characteristic of good memory are following—

(1) Quick Learning—The first characteristic of good learning is quick learning. The child who learns any thing after reading or hearing on time, then his memory is called good.

(2) Good Retention—If a child can remember learnt thing for a long time, his memory is more stable. This is the quality of good memory.

(3) Quick Recall—There is also another quality of good memory- recall. Learnt content is early recalled that is so useful. From the educational point of view quick recall is the most important quality for the student.

(4) Quick and Accurate Recognition—For good memory, not only quick recall but quick and accurate recognition is also needed. Child reads many things related to subject, learns and remembers, in the examination time he recall these things, but without quick and accurate recognition he is not able to answer the desired questions.

(5) Forgetting of Meaningless Things—This is also a good quality of good memory that child forgets useless things and remembers useful things. Useless things hinders in the remembrance, recall, retention and recognition of useful things.

1.4 Kinds of Memory

Psychologists have given the following kinds of memory—

(1) Immediate Memory—After learning a fact or any subject, immediately repeating is immediate

memory. But in this type of learning, there are more possibilities of forgetting.

(2) Permanent Memory—Learnt things are remembered in it for a long time. It found more in the children.

(3) Active Memory—To recall the past experiences after making efforts according to desire is called active memory, as- in the examination hall remembering effort fully to write the answers of the questions.

(4) Passive Memory—When we recall our past experiences without any effort that is called passive memory. For example, as- telling the name of blackboard, remembering its blackness.

(5) Personal Memory—To recall our own personal past experiences is personal memory, as- after watching any event, remembering some experience of our childhood.

(6) Impersonal Memory—In this type of memory besides our personal experiences, other experiences obtained by the means of friend, books, and newspaper are remembered.

(7) Rote Memory—To memorize any subject without understanding it well and to recall it successfully when needed is rote memory. Now a days, most students take the support of this type of memory for getting success in the examination. This type of memory helps in the learning of tables in the maths.

(8) Logical Memory—Learning content after understanding it properly and remembering it and telling it when needed is logical memory. It is also called intellectual memory. This type of memory is useful in the education of a child.

(9) Habit Memory—When a man learns or repeats anything again and again, it turns into his habit. Due to this habit he does not make effort to remember it.

(10) Sense Impression Experience—In this type of memory, when we recall or recognize anything by fact and thought due to the experience of the sense impression, as- telling about something after touching, tasting and smelling it or remembering any fact after hearing.

(11) Physical Memory—When we do some work repeatedly, our related parts are in the habit of doing the same work and there is no mistake in doing that work, as in typing fingers freely fall on the proper letters.

(12) True Memory—Psychologists have called it the best memory. In this kinds of memory, content is remembered in sequence. The sequential knowledge of learnt content becomes stable in it. Facts can be recalled soon by true memory. This type of memory is important in education.

1.5 Summary

- Whatever a man feels ever, that continues to collect in some form in his mind. The experiences, which are on the unconscious level of mind or are not conscious, they are called collected. And which comes on the level of conscious mind, they are called memory. Memory helps us in the practical activities of life.
- Memory has an important place in the education. It is almost impossible to get knowledge without memory.
- According to Mc Dougall—"Memory implies imagining of events as experiences in the past and recognizing them as belonging to one's own past experiences."
- Memory is a complicated mental process. According to Woodworth, four following factors are included in memory— 1. Learning 2. Retention 3. Recall 4. Recognition
- The first characteristic of good learning is quick learning. The child who learns any thing after reading or hearing on time, then his memory is called good.
- Psychologists have given the following kinds of memory— 1. Immediate Memory 2. Permanent Memory 3. Active Memory 4. Passive Memory 5. Personal Memory 6. Impersonal Memory 7. Rote Memory 8. Logical Memory 9. Habit Memory 10. Sense Impression Experience 11. Physical Memory 12. True Memory.

Notes

1.6 Keywords

1. **Recall**—Call back
2. **Recognition**—Identity, Consideration

1.7 Review Questions

1. What is memory? Explain the meaning of memory with definition.
2. Throw light on the factors of memory.
3. Mention the characteristics of good memory.
4. Mention the kinds of memory.

Answers: Self-Assessment

1. (b) 2. (a) 3. (c) 4. (a)

1.8 Further Readings

Books

1. Psychology–The Study of Human Behavior—*Brij Kumar Mishra.*
2. Education Psychology—*S.K. Mangal, PHI Learning Pvt. Ltd., New Delhi.*
3. Development of Learner and Educational Learning Process—*A.K. Verma, Hindi Book Centre, New Delhi.*
4. Psychology—*Dr. Saryu Prasad, Agra Book Store, Agra.*

Notes

Unit-2: Forgetting

CONTENTS

Objectives

Introduction

2.1 Nature of Forgetting

2.2 Causes of Forgetting

2.3 Theory of Forgetting

2.4 Methods of Minimizing Forgetfulness

2.5 Educational Importance of Memory and Forgetting

2.6 Summary

2.7 Keywords

2.8 Review Questions

2.9 Further Readings

Objectives

After the study of this unit, the student will be able to—

- Understand the nature of forgetting.
- Search the causes of forgetting and methods of minimizing the forgetfulness.
- Understand the theory of forgetfulness.
- Understand the educational importance of forgetfulness and memory.

Introduction

It is evident after considering the nature of memory, that, memory specially depends on the process of learning and retention. Forgetting means failure in recalling and retaining of the learnt things. Memory has an important place in the education, but along with it, it is also necessary to study forgetfulness, because forgetting is because of memory. Forgetting makes mind free from the unnecessary and useless things and helps in acquiring new, necessary and worthy things.

The concept of Psychologist Munn—"Forgetting, like memory, is a necessary aspect of learning process, for use must forget incorrect responses while we acquire correct ones."

So here is the nature of memory, educational vision, principles, causes and prevention will be considered.

Notes

2.1 Nature of Forgetting

It is necessary to know the causes and nature of forgetting for the process of learning. In order to get success in the learning process, it is necessary to resolve the causes of forgetfulness. Forgetfulness is such a mental process, by which we are unable in bringing learnt things, experience and thought on our conscious level, means retained experiences cannot be recalled. In forgetfulness, past acquired experiences, which are marked as the memory traces on the mental screen, man finds himself unable in recalling or recognizing them. The disappearance and removing of this memory trace is forgetfulness. Psychologists have given following definitions to clear the meaning of forgetting.

(1) Munn—"Forgetting is failing to retain or to be able to recall what has been acquired.

(2) Drever—"Forgetting means failure at any time to recall any experiences. When attempting to do so or to perform an action previously learned.

(3) Freud—"Forgetting is a tendency toward off from memory that which is unpleasant."

The meaning of forgetting is evident from the above description. Psychologists have done some experiments on forgetting, which throw light on the causes of forgetting. Among them, the name of Ebbinghaus is mentioned. He has called forgetting 'Passive Mental Process'. Rejecting the opinion of **Ebbinghaus, Skaggs, Pilzecker,** and **Freud** have called forgetting 'Active mental Process'. According to them, we do not forget due to the passage of time, the reason of forgetfulness is that there are other activities and causes, happening between the learning and recall.

2.2 Causes of Forgetting

The causes of forgetfulness can be classified between two classes—

(a) Theoretical

(b) General

(a) The Theoretical Causes of Forgetfulness—The theoretical causes of forgetfulness are following-

(1) Theory of Disuse—The founder of this theory is '**Sir Ebbinghaus**'. According to him–when acquired content is not used for long time or it is not practiced, we began to forget it. It is clear that lapse of time originated of disuse is responsible for the forgetfulness. As soon as the time passes, the quantity of forgetfulness grows.

(2) Repression Theory—Psychologists Freud and his followers delivered this theory. According to him, man has suffering and unloving experiences in his life. He does not want to recall them deliberately. Being repressed, these kind of pathetic experiences are forgotten.

(3) Theory of Interference—Muller, Woodworth and Pilzecker has thrown light on this theory. According to them if any activity is done between learning and recall, it is interfering in the recalling of previous learned material. This process is called "Retrospective Inhibition' it means backward stoppage. The process that happens between learning and recall is called 'Introspection Activity'. More the special activity differs from learned activity, higher will be the quantity of forgetfulness.

Task According to Freud, "Suffering experiences are disappeared, being repressed in the unconscious mind." In the context of Freud's opinion, explain forgetfulness.

Notes

(b) General Theory of Forgetfulness—General reasons of forgetfulness are following—

(1) Nature of the Learning Material—If the learning and remembering content is more meaningful, interesting and easy; the process of forgetfulness is less. On the contrary, if the content is useless and complicated, forgetfulness is more.

(2) Amount of Learning Material—If any subject is longer, more time and practice is needed for learning it. Due to more practice, it remains learned for many days. On the contrary, small subject is learned soon, there is no need of more practice in it. Consequently these kinds of learned subjects do not leave traces in the memory and we soon forget them. Thus, less long or short subject is also the cause of forgetfulness.

(3) Degree of Learning—If any subject is learnt or practiced for a long time, it is remembered for long time. On the contrary, we soon forget the under learning subject.

(4) Defective Method of Learning—If learning method is defective; we forget the learnt material soon.

(5) Lack of Interest and Attention—In whichever subject, man is not interested, he does not pay attention in it. In spite of learning, he forgets it.

(6) Lapse of Time—Larger the time interval between learning and recalling, more is the process of forgetfulness, as- it has been cleared in the disuse theory.

(7) Age and Intelligence of Learner—The quantity of forgetfulness also depends upon the age and intelligence of learner. The process of forgetfulness will be slow in the adult and sharp intelligence.

(8) Lack of Repetition—When leant material is not repeated for many days, it is also forgotten, because memory traces begin to look dull in lack of repetition.

(9) Emotional Causes—There are often physical and mental changes due to the orientation of emotional causes as fear, anger, anxiety, confusion, etc. In such conditions it is difficult to remember learnt or past experiences. Often students forget a well prepared lesson in fear and confusion in the examination hall.

(10) Desire of Forgetting—When we do not want to learn any things, we often forget. Often man does not want to remember the tragedy that happened in his life, so he forgets it. Thus forgetfulness is inspired by desire. When child learn without desire he forgets it soon.

(11) Doubt—Doubt gives birth to mental weakness. By which there is lack of confidence in a man. Thus he begins to forget necessary things because of doubt in mind.

(12) Brain Injury—If the brain of man is injured, his memory-power is destroyed.

(13) Mental Shock—If any person gets any mental shock due to any cause, his memory power is also affected by it.

(14) Mental Conflict—The problem created by mental conflict is also the cause of forgetfulness.

(15) Use of Intoxicants—The persons who use intoxicant, their memory power is dull. After learning, if any material is not used, content does not remain learnt for more days.

(16) Mental Disease—Mental disease makes memory- power weak. In the above points the causes of forgetfulness are emotional imbalance, feeling complexities, doubt mental conflict, etc. other things come under general memory.

2.3 Theory of Forgetting

Some theoretical sides have been given for mentioning the causes of forgetfulness before it. In fact Psychologists have presented the theories of forgetfulness for presenting the extended basis of the causes of forgetfulness. So here is the description of important theories that have been presented.

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Notes Forgetfulness is related to learning. There is no question of forgetfulness without learning. So the theory of forgetfulness was delivered, that it may be protected from the bad effect of forgetfulness and for making learning effective.

The theories of forgetfulness are following—

(1) Theory of Trace Decay

(2) Theory of Interference

(3) Theory of Retrieval Failure

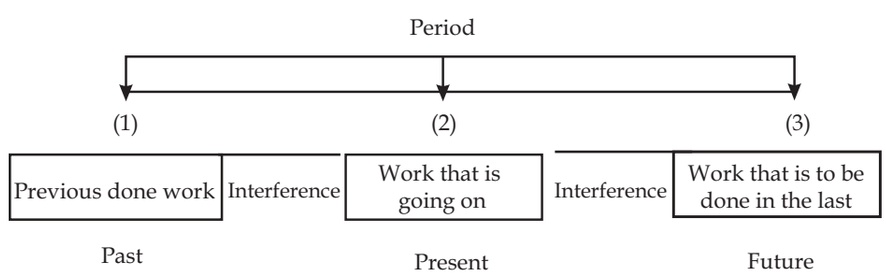
(4) Motivational Theory

(5) Theory of Consolidation

1. Theory of Trace Decay—Theory of trace decay depends on general experiences. Often it is seen, that due to period distance, we forget past experiences. Memory traces, in the memory screen get dirty or removed. Hence past experiences, done work and learning are completely or partially forgotten. Two facts are found primarily in this type of forgetting. Time factor and utility factor, if learnt material cannot be recalled in further times, in this type of forgetting time factor is active, means time factor removes the memory traces slowly. Hence from this point of view the process of forgetfulness, due to period distance, happens because of the decay in the memory traces. Forgetfulness is also affected by the utility factor. The things, those are used in the behavior. Due to practice their memory is strong, but the things that are not used in the behavior, due to lack of practice, their memory traces are decayed, and the process of forgetfulness happens. Thorndike has proved by the experiments that the learning which is not used in the practice is forgotten. Thorndike has described this opinion in his learning rules as a theory of disuse. It is called the 'theory of disuse' in field of forgetting related to study. From the above causes, in which decay is seen in the memory traces, when we describe forgetfulness, that is the theory of decay. In favor of this theory we can present many examples from the behavior of daily life that can confirm this theory. But this theory does not prove useful on the criterion of psychological study and does not have scientific outlook. This is an old theory. Other theories have been delivered due to the dissatisfaction of this theory.

2. Theory of Interference—Muller, Woodworth and Pilzecker etc psychologists have thrown light on this theory. According to this theory, whatever is learnt, retained and remembered at a time, is badly affected by previous and latter works in the form of interference in the recall. Whatever a man is doing, that is done in the present, whatever he has done in the past, that has gone in the past and the work that has to be done, will be done in the future. There is an effective relationship in the works that are done in the three periods of time. It can be presented in the following picture—

Fig. 18.1



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When the learnt work of present time generates interference in the work of past and the work of future generates interference in the work of present, by which there is decay in the recall and retention power, this type of forgetfulness will be called the theory of interference.

Did u know? The theory of interference of forgetfulness is the other name for interference that existed among the different periods of learning.

It is known by this fact that there are two conditions of interference, first, when the learning process of past time produces interference in the process of present time and second, when process of present time produces interference in the process of future time. In the psychological language, both types of interference are known by the following name—

1. Pro-active Interference
2. Retro-active Interference

1. Pro-active Interference—When the factors of forgetting interfere with learning moving forward, that is called Pro-active interference, as it is clear by its name. It is evident from this thought the learning that is being done in the present time is affected by the interference of previously learnt material. The first learning becomes a hindrance in the second learning. For example, a child has to retain and recall the learning material given in the two tables; first he learns the first table and then tries to learn another table. In this process if the learning material of the first table generates interference in the recalling and retaining of the second table, it is proved that, in the forgetting, pro-active interference is activated. This process in the vocabulary of psychologist is called pro-active interference. Often it is seen that proactive interference is important among the most reasons of the forgetfulness of a child. It is appropriate for **M.S. Chauhan** to give following example in this connection—

"Forgetting, we experience in daily life, is more due to proactive inhibition."

2. Retro-active Interference—When the learning process done in the past produces interference or obstacles in recalling and retaining of its previous work, this thought of forgetfulness is called retro-active interference. For example, if a child, after learning first table, tries to learn second table and by the learning of second table, the bad effect of the interference is seen in retaining and recalling of the first table, this process will be called retro-active interference. There is forgetfulness from this type of interference. It is also evident from this factor; interpolated activities are activated between the retaining and recalling of the two learning processes. Consequently forgetting begins to happen. More the similarity between the learning material of past and last, more will be the effect of retro active interference, if there is similarity between the content of both tables, forgetting will be more. There can be more of forgetting due to the excess of interpolated activities, the excess of interpolated learning, excess of time in presenting the interpolated learning and in the period of retaining -rest the excess of activation, because these factors interfere in retaining power and recalling.

We can conclude from the above description that there is pro-active interference in the remembrance of the activation of interpolated activities. In this relation the thoughts of M.S.Chauhan will be appropriate example—

"Interference between the item of the original and interpolated list at the time of the recall is an important variable influencing the amount of retro-active inhibition."

The theory of interference, in the explanation of forgetfulness, has been considered by many psychologists. Although some psychologists as, Asgood etc, do not agree with this theory, because according to their consideration, the quantity of interference cannot be measured, only it can be observed and felt, yet the extensiveness of the theory of interference is capable in explaining the concept of forgetting, because many experiments have been done in the perspective of this theory in the laboratory and are also being done in the present.

Notes

3. Theory of Retrieval Failure—The opinion delivered in this theory is that there is no stable prospect of forgetting, but unstable. After learning some content, during the time of its recall student searches it in his memory treasure. He tries to recall it. After getting success in this effort his memory is activated, but after failing his forgetfulness is activated. Hence the condition of failure in recalling is forgetfulness. Student takes time recalling of memory, puts stress on mind and blows his forehead, all these activities are done for succeeding in the efforts of recalling. We can say that forgetfulness is not losing the memory rather it is failing to bring it on the mental screen. Sometimes it is felt that the content is on the mental screen but it is in some foggy stage, but it does not adopt the nature of retrieval. After doing effort success can be gained in recalling. Sometimes any content can be recalled in a flow without any effort, as that it is put on the tip on the tongue. An unconscious power works in the recalling and retaining in the form of forgetting and memory, which is not known, so the reason of forgetting is unconscious and unknown. Consequently externally the condition of failure in recalling is forgetting, either it is stable or unstable.

Self Assessment

Fill in the blanks:

1. The success in the process is obtained after the solution of the reason of ..... .
2. Ebbinghaus has said the forgetting ..... .
3. According to fraud tragic experiences are forgotten in ..... after being repressed.
4. Most of the psychologists have considered that in forgetting, there is a type of ..... activation.

4. Motivational Theory—This theory is also called the theory of repression. Freud has mentioned the effect of motivation in the relation of forgetting. This motivation is repression. Repressive activities produce such activities in a person, by which, man is inspired for forgetting the event and any subject. A man is learnt to neglect the especial-memory with it, so with the effort of negligence there is decay in the retention power and there is forgetting after being unable to come over obstacles in recalling. Unconscious mind is activated in it, which is related to the memory of suffering, pain and unsuspicious. Man is filled with the fear of that memory, so memory does not want its recall. The effect of the motivation falls upon the both forgetting and memory.

The absence of motivation is also another cause of forgetting. In the educational situation it is seen that students forget the lesson of last classes and make more efforts in the remembering of the lesson of present class. They get more success in the recalling of the content of present class in comparison of the recalling of the content of the last class. Mr. **Zeigarnik** did an experiment in this relation, in which he found students are more motivated towards the incomplete work than complete work. "The explanation of recalling incomplete task, their motivation was satisfied and in the case of incomplete tasks, the attraction of those tasks they were unable to finish main.''

5. Theory of Consolidation—This theory is related for doing interaction, or keeping incomplete in the arrangement of well organized and mutual memory. In such condition we do not get success in recalling. There is the interference of one memory trace by others and the domination of retention on other is the cause of forgetting. As there is a limited period for making cement strong, if it is interacted within this period, it cannot be consolidated. So some time is given for it, similarly there is a retention period for retaining the content, in which memory get strength, in this period the effect of interference by creating efforts of other retention is seen which can not be recalled retention. This is forgetting. This theory of forgetting is considered incomplete and unsatisfied, because it represents the partial form of forgetting.

It can be known by the looking at the above theories that there are many reasons of forgetting. Many theories of forgetting were delivered due to giving importance to different reasons. But in the absence of completeness, incompleteness is seen in each of the theories. We can say in

the comparative way that the theory of interference is logical and appropriate, because it has a psychological basis, and experiments are doing in the laboratory on the basis of this theory after explaining the forgetting.

2.4 Methods of Minimizing Forgetfulness

Psychologist **Munn** has presented opinion for minimizing forgetfulness. Here they have been presenting in short—

(1) There should be a desire of remembering for learning anything.

(2) It is necessary to pay attention for remembering.

(3) Memory—talent should be used for remembering.

(4) Association should be established between the experienced and learnt things with other things.

Besides the above things, forgetting can be resolved by the memory- training.

2.5 Educational Importance of Memory and Forgetting

The Importance of Memory—In the process of education, for learning along with memory process forgetting also has an important place. The different methods of remembering have already been described. The utility and importance of these methods is that easier methods are known to students for remembering and time and work are saved in remembering any subject. Teacher should pay attention on the following things for memory—training, as, providing inspiration, thought association and pay attention to the learning rule, using the methods of remembering etc.

The Importance of Forgetting—Psychologists have done many experiments on the process of forgetting. **Collins and Drever** have expressed their opinions on the importance of forgetting—"It is true that forgetting is the opposite of remembering, but from a practical point of view forgetting is almost as useful as remembering."

Following concepts are presented related to importance and utility of forgetting in education.

(1) Students see, hear and learn many things in the school, but many things are not important, so it proper to forget them. The memory-field of student is limited, so it is necessary to forget old and useless things for learning new things. It is the statement from **Woodworth**—"Learning new things interferes in the remembering of old thing and the memory of old thing interferes in the learning of new things'. Hence the work of learning is completed properly with the ability of maintaining balance between memory and forgetfulness.

(2) New experiences are collected in place of old experiences by forgetting. If the memory traces of all things are imprinted in the memory of child, his opinion and received experiences are scattered. So it is necessary to forget some things for providing organized aspect to thoughts. The concept of **Stuart and Oakden** in this relation is-"If we want arrangement and force in our opinion, forgetting is compulsive for us."

(3) Child sometime gets tragic after bad experience in the society and school, so forgetting is compulsory for the bad experiences, because child's education and development can be affected by it.

(4) Forgetting is useful for improvement.

It is explained from the above things that along with the memory , forgetting is also important and useful in the education of child.

Notes

2.6 Summary

- Memory specially depends on the process of learning and retention. Forgetting means failure in recalling and retaining of the learnt things.
- It is also necessary to study forgetfulness, because forgetting is because of memory. Forgetting makes mind free from the unnecessary and useless things and helps in acquiring new, necessary and worthy things.
- The concept of Psychologist Munn—"Forgetting, like memory, is a necessary aspect of learning process, forget incorrect responses while we acquire correct ones."
- In order to get success in the learning process, it is necessary to resolve the causes of forgetfulness. Forgetfulness is such a mental process, by which we are unable in bringing learnt things, experience and thought on our conscious level, means retained experiences cannot be recalled. In forgetfulness, past acquired experiences, which are marked as the memory traces on the mental screen, man finds himself unable in recalling or recognizing them.
- The causes of forgetfulness can be classified between two classes—(a) Theoretical (b) General.
- In fact Psychologists have presented the theories of forgetfulness for presenting the extended basis of the causes of forgetfulness. So the theory of forgetfulness was delivered, that it may be protected from the bad effect of forgetfulness and for making learning effective.
- The theories of forgetfulness are following— (1) Theory of Trace Decay (2) Theory of Interference (3) Theory of Retrieval failure (4) Motivational Theory (5) Theory of Consolidation
- In the process of education, for learning along with memory process forgetting also has an important place.
- Teacher should pay attention on the following things for memory—training, as, providing inspiration, thought association and pay attention to the learning rule, using the methods of remembering etc.
- Collins and Drever have expressed their opinions on the importance of forgetting-"It is true that forgetting is the opposite of remembering, but from a practical point of view forgetting is almost as useful as remembering."

2.7 Keywords

1. **Interference**—Interaction
2. **Proactive**—Represented,

2.8 Review Questions

1. Explain in detail the nature of forgetfulness.
2. Throw light on the causes of forgetfulness.
3. Explain the theories of forgetfulness.
4. Explain the educational importance of 'memory' and 'forgetfulness'.

Answers: Self-Assessment

1. Forget Fulness 2. Passive Mental Process 3. Unconscious Mind 4. Interference

Notes

2.9 Further Readings

Books

1. Educational Psychology—*S.H. Sinha and Rachna Sharma, Atlantic publication, New Delhi.*
2. Development of Learner and Educational Learning Process—*A.K. Verma, Hindi Book Centre, New Delhi.*
3. Education Psychology—*S.K. Mangal, PHI Learning Pvt. Ltd., New Delhi.*
4. The Information and Importance of Education in the Children—*Seema Chopra, Hindi Book Center, New Delhi.*

Notes

Unit-3: Individual Differences

CONTENTS

Objectives

Introduction

3.1 Meaning and Nature of Individual Differences

3.2 Causes of Individual Differences

3.3 Varieties of Individual Differences

3.4 Importance of the Knowledge of Individual Differences

3.5 Summary

3.6 Keywords

3.7 Review Questions

3.8 Further Readings

Objectives

After the study of this unit, student will be able to—

- Understand the meaning and nature individual Differences.
- Understand the causes of individual differences.
- Understand the varieties of individual differences.
- Understand the importance of the knowledge of individual differences.
- Understand the factor influencing individual differences.

Introduction

Individual differences are the traits and blessing of nature. Generally all persons look same, but it is seen after doing close study that there is some difference among them. No one can look like the other in physique, mental ability and the virtues. Nature and environment both play important role in this type of differences. The children of same parents look very different in physical shape, mental power, behavior and educational achievements. Heredity and environment are the basis for individual differences obtained by virtues. Every body has his unique characteristics, which present him as a different person. The scientific study of individual difference has started some time ago.

Notes

As soon as the study related to development of psychology and behavior developed, the attention of educationalist was also attracted towards it. In the beginning, Sir Frances Galton paid attention towards it during the study of heredity in 19 century. Then in the 20th century, **Pearson, Catell** and **Terman** etc psychologists studied it. Consequently on the basis of this study, after knowing the causes of individual differences, educationalists developed the plan for education, the proper and important theories and education methods in the field of education. These educational psychologists encouraged the child centered education, by which the proper education could be arranged for the children, after studying their age, intelligence, interest and ability. Physical, moral, mental, and social progress of each child can be done according to individual differences. Mr. **Skinner** said, "there is a special period for the development of each possibility of a child, this period is different for different people, if it is not tried to develop this within proper time, it is destroyed." Hence it is important for the development of personality that education should be arranged according to individual differences.

3.1 Meaning and Nature of Individual Differences

Individual differences or personality differences means the differences of one man from other in color, physique, special ability, interest, nature, achievement and other virtues of man. There is no person in the world, which is completely like the other. Even the similarity is not found between two sons of one parent.

Notes Under the individual differences, attention is paid on the physical, mental, emotional and social characteristics of man, and on the basis of these characteristics, a unique man is made.

In the field of education, even from the ancient times, individual differences are seen on the basis of mental ability, by which, they have more or less differences. According to **Skinner**, " Today we think that in the individual differences, only such aspects of whole personality should be included, which can be measured." It is indentified from the definition of **Skinner** that all the aspects of personality come under the individual differences, which can be measured. Whichever aspects of men are included under the individual differences, after identifying them, the nature of individual differences is identified. According to Mr. Tailor—" Measurable differences have been shown to exist in physical size and shape, physiological functions, motor capabilities, intelligence, achievement and knowledge, interests, attitude and personality traits."

Educational psychology is related to students. It is important to study it from the educational point of view. Children of different abilities and intelligence are found in the class. Differences are found in their personalities, which affect their education, and personal differences are found among them as well, today attention is not only paid on the differences related to acquiring knowledge or subject ability, but their whole personalities are studied after considering their individual differences of their physical, moral, emotional and social characteristics. It is identified from the above opinion that from the educational point of view, individual difference is related to all those capabilities and traits by which personality is developed and constructed.

It is identified from the above opinion that whatever differences are found in the physical, mental capability and personality related traits, are the basis of individual differences.

The Bases of Individual Differences—The important bases of individual differences are following—

(1) Heredity (2) Environment.

Notes

(1) Heredity—Heredity is a trait that comes to children by their parents and other ancestors, which includes physical, mental and practical virtues. Affinity and differences are seen on the basis of it. Heredity is the important basis of individual differences. Due to heredity, physical and mental differences are found.

(2) Environment—Environment has an important place in the human-development. From the Social and psychological point of view, all those things come under environment, which affect human development and its relations. In this way environment has its extended meaning. In whichever environment, a man lives, he is affected by it. Individual differences are developed by the effect of environment. Its description has been presented further.

3.2 Causes of Individual Differences

Psychologists have told many causes of individual differences. Important causes are following—

(1) Heredity—The important basis of individual difference is heredity. Psychologists **Galton, Pearson, Turman, Mangugal and Binet** etc. have proved it. Heredity is the important cause of the physical, mental and conducts characteristics of man. The transition of ancestral virtues are found from one generation to another and that's why differences are seen in the man. For instance- the children of intelligent parent are intelligent and the children of dull parent are dull. Sometimes differences are found between the children of one parent. They are a little bit different in the mental power, nature and other virtues from one another. They are so because of heredity.

(2) Environment—Environment is the second cause of individual difference. Under the environment, man is affected by the environment of family, social, geographical and cultural environment. According to that he has physique, mental development, living, behavior, conduct and thinking. For example the child of educated and well mannered family is different from the child of uneducated family. Differences are seen between the children of village and city, cold country and hot country. The country which has cold environment, the people, who belong there, are healthy and hard working, and the people who belong to the country of hot environment are lazy and weak.

(3) Age and Intelligence—The physical, mental, and emotional development of child is done according to his age. So the difference is seen in the child of different age. Intelligence is accepted as the innate capability. Yet the development of capability is related to age and environment. Differences are found in men due to intelligence. Hence in case of differences, found in men, they are put in such sequence, which can vary from foolish to talented. The difference in intelligence creates much difference among men.

(4) Health—Individual difference is found due to physical health. Some are healthy and powerful, some people are weak, thus differences are found in the physical health and working capability of them. Physical health is related to mental health. There is much difference between the completely healthy and unhealthy men. Physical health is the basis of individual difference.

(5) Caste, Race and Nation—Caste, Race and Nation has an important place in the causes of individual differences. For example- the children of Brahmin caste are studious, the children of kshtriya are lover of battle and courageous and the children of Vaishyas are expert in trading. American children are more intelligent and skillful than the children of Negros. In the same way the physical, mental and emotional characteristics of one nation are different from other. We can recognize the person of different countries due to the causes of individual differences.

(6) Education and Economical Condition—Man is properly developed by the education and he becomes courteous, serious and thoughtful. Education makes him different from the illiterate and uncivil man. The economical condition of family affects the physical, educational, emotional and social development.

(7) Sex Difference—There is difference in the physical, mental and emotional development of boy and girl. From the physical point of view, girl develops faster than boy. Due to this development, difference is

found in the mental development. There is affinity between the nature and other virtues of personality. For example-boys are strict and brave and hard working by nature while the girls are soft, kindhearted and shy and peace lover.

(8) Maturity—Maturity is generally related to the age of man. Physical and mantel Maturity comes after the birth of child gradually. Some children are soon physically and mentally developed, maturity come in them early. The education of child is closely related to maturity. This maturity comes in any child soon or in other later. Thus this is also an important cause of individual difference.

(9) Motor Ability—Due to motor related ability, some people do work soon and skillfully. In the motor skill, there is intelligence along with age. According to this, differences are found between different men.

(10) Background—The children, who join the school, belong to whichever families and community, differences are found in their backgrounds. For example- the children of highly educated rich family are quite different from the children of uneducated and lower class families. Children' emotional, social, moral and appearance development is affected by their family and society. Individual Differences are seen in case of different family and social back-ground.

(11) Effect Over Mental Development—Mental abilities are not developed equally in all children. Intelligence, imagination, observation, logical power, memory and the capability of learning come under mental abilities. Intelligence is most important among them. Individual differences are found due to the mental age and physical age of children.

(12) Effects of Emotions—Differences are seen among the men due to emotions. Men are seen angry, quarrelsome and strict, while other is laughing, lover of peace and kind hearted. Thus individual differences are also affected by the emotional factor.

(13) Special Abilities—Every one has some abilities besides common abilities. These mental abilities are related to mental, artistic, personality related and motor skills. Everyone cannot do same work. When they select the occupation according to their interest and special ability, they succeed. Individual differences are seen in scientists, doctors, engineers, teachers, politicians, artists and musicians due to special abilities.

(14) Acquiring Power—Psychologists have proved that acquiring power is found more in some or less in some. One child understands the subject easily, because of having acquired power, and other understands it later. In the same class any student has the fast ability of learning while other has slow. Someone gets best marks in the examination, then someone common, we call them intelligent or dull on the basis of it. Individual differences are seen because of this type of receiving power.

(15) Personality—Personality is the sum of all traits of the man. Everyone has physical, mental and emotional and intellectual traits different from other. From the physical point of view beautiful- ugly, fatty- thin, from the emotional point of view strict- soft, quarrelsome –humble, lover of peace, courteous from the intellectual point of view, intelligent and dull men are found. Individual differences are found because of this type of personality traits.

The above causes of individual differences are generally related to all men. Garrison and others have described some causes of individual differences, found in the students who read in the school. "The difference among children may best be accounted for by variation in the motivation, intelligence, maturation and environmental stimulation.''

3.3 Varieties of Individual Differences

Whatever differences are found among two men, the basis of that personality differences or types of differences is certain. The types of personality differences are seen in the following areas—

(1) Physical Difference—Under the physical difference, physical health, weight, high, sex differences and physical maturity come. Some men are fatty, some are thin, some are tall some are short; some are

Notes

fair, some are beautiful, some are ugly, it is the consideration of psychologist that ability, intelligence, tendency and interest are affected by all these things.

(2) Mental Differences—The following things are included under mental difference-

(A) Intellectual development Related to Differences.

(B) Main Tendency Related to Difference.

(C) Difference in learning.

(D) Interest related differences.

(E) Nature related differences.

(A) The Cause of Intellectual Differences—Some one is intelligent, some one is wise, someone is less wise and some one is common or dull minded or foolish. The observation of this ability is done by intelligence-test.

(B) Main Tendency Related Differences—Some men are kind Hearted, some are strict, some are laughing and cheerful and some are always sad and disappointed. In this way, some have collective nature and some have curious nature. A man having curious nature always tries to know and learn new things.

(C) Differences in Learning and Obtaining Knowledge—In the field of education the meaning of individual differences is that the difference that is found in different syllabus and reading and writing of student, by which difference is found in its achievement. It is known by the quotient examination that difference is found in the capability of learning of student. Teacher should adopt personal and class-method according to need because of having difference in the capability of learning of student.

(D) Interest Related Difference—Some students are expert in reading, some are in playing. There is different in the interest of child and adult, boys-girls, men and women.

(E) Nature Related Difference—Some men are wicked while others are polite. In the same way difference is found in the nature of boy and girl.

(3) Personality Related Differences—Psychologists have called some men introvert, or some extrovert due to personality related virtues. There are many types of personality differences. It is necessary to know about the personality related differences for obtaining the knowledge of personality differences. It has been described further chapter.

Variability in Individual Traits—It has been described the nature, causes, basis and scope of individual difference in the previous pages. It has been identified from this detail that one man is different from other from different causes. Sometimes some virtues are found in man different from the other , inequality or difference is seen in them. Whatever difference is found in the skill, ability and virtues of the man, that is called the trait variability. For example if the different abilities of one student is tested, sometimes he seems above average and other seem below average, in the same way one student may be intelligent in one subject and dull in other subjects. As an artist is intelligent in arts but he is dull in maths. From the educational point of view, variability has great importance.

Did u know? What ever differences are found in the virtues, abilities and skills of men, that is called trait variability.

3.4 Importance of the Knowledge of Individual Differences

Modern psychologists give importance to individual differences in the education of children. A teacher can do more welfare of his students after the knowledge of individual differences. Often there

are intelligent and dull minded students except common student in every class. Class education is good for the children of common intelligence. Dull minded and intelligent students do not take the advantage of it, because every one is educated by the same method generally. There is no advantage of giving education to all students by one method. Hence it is important keeping in mind the individual differences, the following things should be added in the education of children.

Self Assessment

Put right and wrong sign in front of given statements:

1. Heredity is the important basis of physical, mental and conducts characteristics of men. ☐
2. Acquiring power is equal in all men. ☐
3. It will be justified to give education to students by one method. ☐
4. Generally maturity is related to the age of men. ☐

(1) Limited Size of Class—Keeping in mind the individual differences of children, the numbers of students should not be more in the class. It is the opinion of psychologist that there should not be more students than 20 or 25 in a class, in case of having more students in the class, teacher cannot establish connection with the students. Ross has said in this relation- "The number of students should be less under every teacher so that he could know them very well, without knowing it he could call some student to do some work impossible which is impossible for them to perform."

(2) Division of Students—Student should be divided in homogeneous groups on the basis of their individual differences in each class. The physical age, social and emotional tendency of children should be kept in mind in this type of division. On the basis of general quotient intelligent, general and dull minded children should be kept in separate sections. Each student gets the opportunity of progressing in this type of class division.

(3) Syllabus Construction—Keeping in mind the interest, intellectual level, aptitude, tendency and needs of students and according to the individual differences, syllabus should be constructed. Various kinds of subjects should be included in the syllabus. Syllabus should be flexible. Mr. **Skinner** thinks in this way that whatever is the reason for the individual differences of the children, we should face these differences.

(4) Selection of Teaching Method—Teaching methods should be used on the basis of individual differences. It is un psychological to teach all student by one method.

(5) Arrangement of Individual Education—In the modern educational world, various types of educational method are invented for giving personal education, which are following—

(a) Dalton Plan, (b) Project Plan, (c) Montessori, (d) Kinder Garten, (e) Winnetia Plan

This method is invented by Carlton Washburns. In this method , learner is given an opportunity to learn according to his speed, paying attention on personality training, Mr. Ross has said, " division according to kinds is not the real solution of difficulties but personal training, as in the Montessori method and Dalton method, in which success is sure, there is no place for doubt."

Task Explain in the context of current government educational method that the effort of giving education on the basis of individual differences can succeed? Give logic in favor or against.

(6) Educational Direction—A teacher can give direction to students after getting the information of individual differences. Teacher can tell them that which subjects they can select in the high school and intermediate classes.

Notes

(7) Occupational Direction—Students can be supported in the selection of favorable occupation, after studying their virtues related to physical, mental and personal aspects. The main purpose of education is to earn money, so it is necessary to select any occupation for living. Hence on the basis of individual differences, it is important to give them occupational directions.

(8) Education According to Sex Differences—There is difference in the interests, capabilities, abilities and needs of boys and girls. Hence their education should be arranged according to their differences. In the beginning, their syllabus can be same but there should be some difference in the middle classes. As in the present time Home science is necessary for girls and math for the boys.

(9) Home Work—It is necessary to keep in mind, the individual differences of students during the time of giving homework to them. It will be proper to give difficult homework to intelligent students, and easy to dull.

(10) Support in the College, Family and Society—College, family and society is one of the most important factors, influencing the individual differences. Hence according to education- psychology, there should be Personal Corporation among these organizations for getting to the purpose of proper development of child.

(11) Establishment of Multi-Purpose Colleges—Multi purpose colleges should be established according to the children of special abilities, in which the work of craft, wood and leather and the education of other techniques should be arranged.

The educational importance of individual difference is identified from the above description.

3.5 Summary

- Every body has his unique characteristics, which present him as a different person. The scientific study of individual difference has started some time ago. As soon as the study related to development of psychology and behavior developed, the attention of educationalist was also attracted towards it. In the beginning, Sir Frances Galton paid attention towards it during the study of heredity in 19 century. Then in the 20th century, Pearson and Catell and Terman etc psychologists studied it. Consequently on the basis of this study, after knowing the causes of individual differences, educationalists developed the plan for education, the proper and important theories and education methods in the field of education.
- Individual differences or personality differences means the differences of one man from other in color, physique, special ability, interest, nature, achievement and other virtues of man.
- According to **Skinner**, "Today we think that in the individual differences, only such aspects of whole personality should be included, which can be measured." It is indentified from the definition of **Skinner** that all the aspects of personality come under the individual differences, which can be measured.
- The important bases of individual differences are following— (1) Heredity (2) Environment.
- Psychologists have told many causes of individual differences. Important causes are following— Heredity, Environment, Age and Intelligence, Health, Caste, Race and Nation, Education and Economical Condition, Sex Difference, Maturity, Motor ability, Background, Effect over mental development, Effects of Emotions–Special Abilities, Acquiring Power, Personality.

3.6 Keywords

1. Variability—Move here and there, changes.

Notes

3.7 Review Questions

1. Throw light on the meaning and nature of individual difference.
2. Explain the causes of individual differences.
3. How many types does individual difference have?
4. Show the importance of the knowledge of individual difference in the education.
5. Explain the factors influencing the individual difference.

Answers: Self-Assessment

1. (✓) 2. (×) 3. (×) 4. (✓)

3.8 Further Readings

Books

1. The Importance and Information of Education in the Children—*Seema Chopra, Hindi Book Center, New Delhi.*
2. The Development of Learner and Teaching Learning Process—*A.K. Verma, Hindi Book Center, New Delhi.*
3. Education Psychology—*S.K. Mangal, P.H.I Learning PTV, New Delhi.*
4. Education Psychology—*S.H. Sinha and Rachna Sharma, Atlantic Publications, New Delhi.*

Notes

Unit-4: Factors Affecting Individual Differences

CONTENTS

Objectives

Introduction

4.1 Factors Affecting Individual Differnces

4.2 Summary

4.3 Keywords

4.4 Review Questions

4.5 Further Readings

Objectives

After the study of this unit, student will be able to:

- Understand the various factors influencing individual differences.

Introduction

No two individuals are alike. They differ from each other in many ways. They differ in age, sex, hereditary potential, intelligence, achievement, interests, and aptitudes, needs physical, social, emotional and developmental.

By individual differences we mean physical and behavioural variations, seen in all species including human beings. These differences are causes by heredity and environment. Heredity is determined by genes, chromosomes and cytoplasm. Environment is determined by family, school neighborhood and place of work.

Individual differences are generally measured through psychological test such as intelligence or personality. The differences are generally presumed to be normally distributed in population. Knowledge of individual differences is helpful in clinical work as well as in educational set up.

We have seen different causes of individual differences as:

- Difference in Growth Rate
- Difference in Socio-Economic Backgrounds
- Interaction of Heredity and Environment
- Physiological Differences

Let us see several factors affecting individual differences.

Notes

Notes According to Skinner, "Today we think of individual differences as including any measurable aspect of the total personality." From this definition of individual differences it is evident that it comprehends every aspect of the human personality, albeit all aspects that is in some manner measurable.

4.1 Factors Affecting Individual Differnces

A well-planned lesson does not teach all students with equal effectiveness. Usually, however, you soon see that this is natural. One manifestation of the difference among students is that they seldom learn at the same rate. Differences in rates of learning are based on differences in intelligence, background, experience, interest, desire to learn, and countless psychological, emotional, and physical factors. You must recognize that students are different. You must recognize that this fact dictates how much you can teach, at what rate, and when.

The major factors that influence individual differences in behavioural patterns are personality, demographic factors, abilities and skills, perception, attitudes and perception. Let us discuss them and they are as follows:

1. **Personality**: Personality can be defined as the study of the characteristics and distinctive traits of an individual, the inter-relations between them and the way in which a person responds and adjusts to other people and situations. The several factors that influence the personality of an individual are heredity, family, society, culture and situation. It implies to the fact that individuals differ in their manner while responding to the environment. Personality can be regarded as the most complex aspect of human beings that influences their behaviour in big way. It can be concluded that the study of personality traits offers an opportunity to understand the individuals. It helps them properly in directing their effort and motivating them for the accomplishment of the goal. It refers to the fact that different environmental factors may generate different responses. The study of these responses is very important.
2. **Demographic Factors:** The demographic factors are socio economic background, education, nationality, race, age, sex, etc. The study of demographic factors is significant as it is one of the factors influencing Individual differences.
3. **Abilities and Skills**: The physical capacity of an individual to do something can be termed as ability. Skill can be defined as the ability to act in a way that allows a person to perform well. The individual behaviour and performance is highly influenced by ability and skills. A person can perform well if his abilities and skills are matched with the work requirement.
4. **Attitude:** According to psychologists, attitude can be defined as a tendency to respond favourably or unfavourably to certain objects, persons or situations. The factors such as family, society, culture, peers and organisational factors influence the formation of attitude. Individuals can perform better if they form a positive attitude.
5. **Perception:** The cognitive process meant for interpreting the environmental stimuli in a meaningful way is referred to as perception. Every individual on the basis of his/her reference can organize and interpret environmental stimuli. There are many factors that influence the perception of an individual. The study of perception plays important role. Individuals can likely to perform better if they are going to perceive it in a positive way.

Self Assessment

1. By individual differences we mean ..... variations

Notes

2. Individual differences are generally measured through psychological test such as .....
3. Attitude can be defined as a tendency to respond favourably or unfavourably to certain .....
4. The cognitive process meant for interpreting the environmental stimuli in a meaningful way is referred to as .....

4.2 Summary

- No two individuals are exactly same. Individual differences are characteristics of all individual organisms. There are several factors affecting the individual differences such as personality, demographic factors, abilities and skills, perception, attitudes and perception.

4.3 Keywords

1. **Heredity**—Heredity is the passing of traits to offspring from its parents or ancestor.

4.4 Review Questions

1. Describe the various factors influencing the Individual differences.
2. Discuss how demographic factors influence the Individual differences?
3. Define personality and how it affects the Individual differences?

Answer Self-Assessment

1. Physical and behavioural
2. Intelligence or personality
3. Objects, persons or situations.
4. Perception.

4.5 Further Readings

Books

1. The Importance and Information of Education in the Children—*Seema Chopra, Hindi Book Center, New Delhi.*
2. The Development of Learner and Teaching Learning Process—*A.K. Verma, Hindi Book Center, New Delhi.*
3. Education Psychology—*S.K. Mangal, P.H.I Learning PTV, New Delhi.*
4. Education Psychology—*S.H. Sinha and Rachna Sharma, Atlantic Publications, New Delhi.*

Notes

Unit-5: Nature, Types and Development of Personality

CONTENTS

Objectives

Introduction

5.1 Meaning and Nature of Personality

5.2 Types of Personality

5.3 Summary

5.4 Keywords

5.5 Review Questions

5.6 Further Readings

Objectives

After the study of this unit, the students will be able to—

- Understand the meaning and nature of personality.
- Know the types of personality.

Introduction

Generally personality means the external aspects, color and physical built. Often, we hear in the daily life that the personality of that man is very good, effective or bad. The meaning of good personality is that the physical appearance of that person is beautiful, he is healthy and soft spoken, he is good natured and his conduct is good and he easily attracts others. Undoubtedly these virtues are the characteristics of good personality, but this is only one aspect of personality. From the psychological point of view, the meaning of personality is something else. Personality is the mirror of whole behavior. Personality is expressed by thinking, behavioral activities and one's movements. The conduct and behavior of a man is the mixture of physical, mental, emotional and social virtues, in which oneness and consolidation is found. Thus personality is the entire virtue of the behavior of a man. All behavior of a man is for the adjusting with the society. In the social circle of each man, due to his special personality, some differences are found in his behaving pattern. Whatever type of behavior he does for adjusting himself with the social surroundings that makes his personality. The behavior of a man is affected by his internal feelings and external environment. According to some people, there is no special difference between conduct and personality. According to Woodworth—"the indication

of character is towards that character, which can be called good or bad, which is success or failure in adopting the accepted ideals by the society. The indication of the personality is towards that behavior, which is neither good nor bad, but other persons feels it interesting or uninteresting and which makes the conditions favorable or unfavorable among his companions. The difference between character and personality is not explained by this statement. So according to scientists this difference can be neglected. What is conduct? What are the characteristics of conduct? These things have been mentioned in the previous chapter. Higher characteristic have important place in the personality development, so in the daily life it will not be practical to consider conduct different from personality. It is necessary to study the opinions of different psychologists for understanding the nature of personality clearly. In the present chapter the meaning and definition of personality, the characteristics of personality, factors influencing the personality along with organized personality, the light will be thrown on the personality tests as well.

Notes From the psychological point of view the meaning of personality is different. Personality is the entire form of the whole behavior of man.

5.1 Meaning and Nature of Personality

Many opinions are famous related to word 'personality'. In the common language the meaning of personality is understood by external aspects, but psychologists have given its meaning under a new light—

(1) Verbal meaning—'Vyaktitva' is the Hindi translation of the word 'personality'. This word has been taken from the Latin word 'Persona' which means outfits, wearing which, the character of the drama, during the time of play, used to change into indifferent roles. In the beginning, the meaning of this word was used as a cover, thus word personality indicates towards the external virtues.

(2) Meaning from general point of view—The meaning of common people's personality is, the external aspects and those virtues by which he attracts others toward himself and after influencing others, wins over them.

(3) Meaning from the practical point of view—"A man's personality is the total picture of his organized behavior." —Deshiell

(4) Meaning from the philosophical point of view—personality is the other name of spiritual knowledge; it is the ideal of completeness.

(5) Meaning from the social point of view—On the basis of sociology, the definition of personality has been given in this way-

"Personality is the organization of those all factors by which a man gains some place in the society; so we can call personality a social flow."

(6) Meaning from the psychological point of view—from this point of view, in the explanation of personality, importance has been given to the environment and heredity. It seem after explaining personality in the psychological way, whatever internal and external qualities, abilities and characteristics are in a man, personality is the integrated form of all of them. Whichever virtues, capabilities and strengths are conceived by a man from birth, they continue to develop by and by. A man, in his developing period, on the basis of his innate strength, does activity and reaction for the adjustment with the society, consequently he gains some special abilities, habits, interests, and attitudes. In the effort of establishing adjustment with the environment, his innate gained virtues are purified and increased, so personality is also called '**Dynamic Organization**'.

Notes

The aim of education is the all round development of personality. Psychological and educational intimate relationship. Therefore, it is necessary to know the definitions of personality provided by psychologists—

(a) Biesanj & Biesanj—"Personality is the organization of person's habits, attitudes and traits and arises from the inter-play of Biological, social and cultural factors."

(b) Munn—"Personality maybe defined as the most of the behavior, interests, attitudes, capacities, abilities and aptitudes."

(c) Allport—"Personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustment to his environment."

(d) Drever—"The word personality is used for the dynamic organization of well organized form of those physical, mental, moral and social virtues of individual, by which he deals with others in his social life."

5.2 Types of Personality

It is important to know the types of personalities for knowing the diversities related to personality. Different Psychologists have classified the personality on the basis of different attitudes. Generally from the following points of view the kinds of personality have been divided-

1. Constitution Viewpoint
2. Sociological Viewpoint
3. Psychological Viewpoint

(1) Constitution Viewpoint—German psychologist Kreshmer has made the following types on the basis of constitution.

(a) Asthenic—This type of man is thin and lean. His head is long, arms are slim, chest is small and limbs are long and slim. This type of man does not like to hear his criticism, but likes to criticize others.

(b) Athletic—This type's individual is strong and healthy. His chest is wide, swelling and strong arms and strong muscles. They can adjust with other according to wish.

(c) Pyknic—This type man is short height, circular, and fatty. He is fond of comfort and is practical.

(d) Dysplastic—The mixture of above three types is found in it. The body of this type's man is simple.

The famous psychologist of America '**Sheldon**' has divided the personality on the basis of physical shape—

(a) Endomorphic—This type of man is more fat, spherical, soft and has concrete body. His digestive parts are more developed. He is fond of food. He is fond of comfort, fast in sleeping, fond of love, fond of entertainment, gentle, wise, tolerant and soon gets worried.

(b) Mesomorphic—These type of men have healthy and well organized body. They have more strength and energy. They are adventurous, active and hard working.

(c) Ectomorphic—Such men have lean, soft and weak body. They are hesitant, less talkative, isolated, patient and full of emotions.

Psychologist **Warner** have told many types of men from the physical health and development point of view—(a) Health (b) Incomplete (c) Undeveloped (d) Handicapped (e) nerve patient (f) backward and dull minded (g) lazy (h) epilepsy (i) powerful.

Psychologist **Canon** has said the types of personality on the basis of inner excretion gland. The development of man is affected much by glands, by which personality differences are found—

(a) Thyroid Gland—The excretion through this gland is called Thyroxin. Physical and mental development is effected by it. If this gland is not developed properly among the men, they are dull

minded, tiny and lean. They are lazy, worried, depressed and disappointed. When this gland works properly, man is always cheerful and his health is proper.

(b) Pitutory Gland—Because of the more excretion of this gland, body becomes long, if there is less excretion, the body becomes tiny or body is not developed properly. If this gland works properly, man is cheerful, peaceful, patient and physically and mentally tolerant.

(c) Adrenal Gland—When this gland developed more, the nature of man is quarrelsome and industrious. They are developed before time.

Thus the more and less excretion of gland makes the personality of man uncommon. Human nature depends upon the activities of these glands. So we can say that these glands also decide the personality.

According to Indian Ayurvedic there are three kinds of men—

(a) Phlegmatic—These people are fatty, peaceful and hardworking.

(b) Painstaking—These are lean, working and fickle minded people.

(c) Rheumatics—These people are neither fatty nor lean, they have medium body but they are irritated.

It is the belief of Athenians that there are four kinds of men on the basis of four gland found in the body of the men—

(a) Phlegmatic—these people are peaceful, lean and peaceful.

(b) Melancholic—These people are pessimistic.

(c) Choleric—these people are soon aggressive.

(d) Sanguine—These people are optimistic, highly ambitious, happy and of hard working nature.

(2) From the Sociological point of view—Psychologist Sprangar has given the following kinds of personality on the basis of social feelings and work—

(a) Theoretical—This kinds of man forces more on the theory of man. Philosophical, scientific, social reformers come in this category.

(b) Economic—This kinds of man evaluates everything from the economical point of view. Traders are come in this category.

(c) Religious—These people have faith in god and spirituality, as, saint, sage, yogi, kind-hearted and religious men.

(d) Political—These people have faith in the politics and power, this type of men have a desire of dominating others. They take interest in political works, as, leaders

(e) Social—These types people have more social virtues. They are interested in social-welfare.

(f) Aesthetic—These types of people are devotees of art and beauty and watch every thing from the aesthetic point of view, as-artists, painters, etc.

(3) Psychological point view—Psychologists have told the two basis of personality on the basis of human nature—

Psychological Age: on the basis of human nature are described by two major personality—

(*i*) Introvert Personality—Those people have this types of personality, whose nature, habits and virtues are not expressed externally. These people are self centered and lost in themselves, they have no worry of outer world. Their other qualities are following—

(a) These people are less talkative.

(b) They are soon confused.

(c) They feel complication in expressing their thought because of hesitative nature.

(d) They are worried, keep themselves limited in their thought.

(e) They are full of anxiety, doubt and carefulness.

Notes

(f) They have true sense of duty.

(g) They do every work carefully.

(h) They are good author, but not good orator.

(i) They are studious and thoughtful, often such men are the book licker and they become scientist, philosopher and researcher after some time.

(j) They do not like useless laughing, criticism and useless talking.

(*ii*) Extrovert Personality—This type of people take interest in the outer world, their qualities are followings:

(a) These people take interest in social life, always aware for adjustment in the society. They are optimistic and according to situation they manage themselves.

(b) They are expert in the practical life, they have opportunistic nature, and soon they become popular. This type of man becomes mostly social, political or trader, leader, actor and player etc.

(c) They influence others to do their work.

(d) They are free from worries; their purpose is to pass a joyful life. They remain cheerful in the present and do not worry about future.

(e) They have more sense of self exposure. They always try to influence others by their movement, outfits and abilities.

Did u know? According to psychologists, a very few men have the type of personality, which is completely introvert or extrovert. A lot of people have the mixture of both the virtues. These people are called Ambivert.

Ambivert Personality—This type man can bring introvert virtues in his thinking and he can give place to extrovert virtues as a work. For example- a man can be a good writer and speaker, a man exposes social behavior, but he does not want to do any work alone. The man of Ambivert personality sees the benefit of self and society.

(B) Freud, who was a famous psychoanalysis, has said the following three types of personality—

(1) Oral Erotic—According to Freud, an infant wants to get sexual pleasure in his mouth means sex dwells in the mouth in the infancy, he sucks, bites, licks for getting the pleasure of sex. And he brings things towards his mouth. Moving ahead in the activities of getting this pleasure, personality is seen dividing between two parts.

(a) Oral Passive—The children, in which oral passive types of personality is developed. They are optimist, immature, depended, always involved in their thoughts.

(b) Oral Sadistic—The children in which Oral sadistic types of personality is developed, they are pessimistic, aggressive, doing uncouth behavior toward others and have doubtful nature.

(2) Anal related—Child's anal is the second basis or stage of getting sexual pleasure. Children are engrossed with the anal related activities at this level; in this stage he gets sexual pleasure by doing stool. Obsessions, misery, lover of rules and management, etc virtues are developed by this type of activity.

(3) Phaltic—This is the third level of the personality development, which is called the level of phaltic development. Children touch their phaltic at this level, these types of activities work in the adolescent. The especial characteristics of personality are developed inspiring by the tendency of these activities, by which adolescent behave to attract others and by exposing self love.

Notes

Task What do you understand by Ambivert personality?

(c) Allport has classified the personality on the basis of the virtues of man. According to him virtues have realistic and strong existence. Allport has defined the virtues in the following way—

"A trait is a generalized and focalized neurophystic system with the capacity to render many stimuli functionally equivalent and to innitiet guide consistent forms of adaptive and expressive behavior."

According to Allport, the nature of virtues is general and stable. He has divided all the human virtues into three parts—

(*i*) Cordinal trait—the traits which are in men in more quantity, those are cordinal traits, as, devout virtues towards the achievement. If this trait is presented in the man as a cordinal trait, it will be presented in him throughout life.

(*ii*) Central trait—central traits are less cordinal in comparison of cordinal traits. Yet they are generalized sufficiently, means their central tendency is often stable.

(*iii*) Secondary dispositions—the secondary dispositions of men are especially limited traits and are presented as attitudes. Attitudes quantitatively are inclined towards the positive and negative pole and it can be related to the learning.

Self Assessment

Put the sign of right (✓) and wrong (×) in front of the given statements:

1. German psychologist Kreshmer has said the four types of body structure. As, Asthenic, Athletic, Pyknic, Dysplastic. ☐
2. Freud has described the five types of personality. ☐
3. Allport has classified the personality on the basis of the external composure. ☐
4. Psychologist Yung has said the two types of personality on the basis of nature. ☐
5. Extrovert man takes interest in the society. ☐

(d) Thorndike has divided the men on the basis of rumination and imagination—

(i) Minute thinker—These types of men before doing work, ruminate about the cause and effect of the work properly. They take interest in the math, science, philosophy, and logic.

(ii) Concept thinker—This type of a man has to take help of the words, digits, symbols and signs for thinking, as mathematician, Geologist.

(iii) Subtle thinker—They are mostly dependent on the active activities and according to them, success can be obtained by the medium of subtle things.

(iv) Terman has tried to know the information on the personality difference on the basis of knowledge quotient. Classification of men, on the basis of knowledge quotient, is following—

(a) Genius (b) Highly intelligent (c) Good intelligence (d) Common intelligence (e) dull minded (f) fool (g) Idiot.

(e) Catell has given the two types of personality—

(i) Surgent—these type of men are extrovert, pleasing natured, friendly, entertainer, opportunist. They have more sense of exposure and more sense of becoming leader of the society.

(ii) Desurgent—these types of men are introvert. The qualities of the introverts are found in them.

Notes

(f) Stephenson, on the basis of division of Yung, divided the personality of man in to two parts.

(i) Preserverator—After accomplishing any work if it still moves in the mind, or it influences the mind for a long time, this process is called preservation. Whoever are affected by this process, they are called preserverator. This type of man is introvert.

(ii) Non-preserverator—The men whose minds are not affected by the work for a long time, they are called non- preserverator. These types of men are extrovert .

(g) In this way Indian teachers and psychologists have also mentioned the three types of men-

(i) Royal—Royal virtues operate in them. Fickleness, excitement, and activeness are found in them.

(ii) Genuineness—They are mild, peaceful and religious natured.

(iii) Ignorant person—The coordination of ignorant qualities is found in them. They are full of anger, quarrel, laziness and atheist.

5.3 Summary

- Generally personality means the external aspects, color and physical built. Often, we hear in the daily life that the personality of that man is very good, effective or bad. The meaning of good personality is that the physical appearance of that person is beautiful, he is healthy and soft spoken, he is good natured and his conduct is good and he easily attracts others. Undoubtedly these virtues are the characteristics of good personality, but this is only one aspect of personality. From the psychological point of view, the meaning of personality is something else. Personality is the mirror of whole behavior. Personality is expressed by thinking, behavioral activities and one's movements. The conduct and behavior of a man is the mixture of physical, mental, emotional and social virtues, in which oneness and consolidation is found. Thus personality is the entire virtue of the behavior of a man.
- From the philosophical point of view- personality is the other name of spiritual knowledge; it is the ideal of completeness.
- **From the psychological point of view**—from this point of view, in the explanation of personality, importance has been given to the environment and heredity. It seem after explaining personality in the psychological way, whatever internal and external qualities, abilities and characteristics are in a man, personality is the integrated form of all of them. Whichever virtues, capabilities and strengths are conceived by a man from birth, they continue to develop by and by. A man, in his developing period, on the basis of his innate strength, does activity and reaction for the adjustment with the society, consequently he gains some special abilities, habits, interests, and attitudes. In the effort of establishing adjustment with the environment, his innate gained virtues are purified and increased, so personality is also called '**Dynamic Organization**'.
- It is important to know the types of personalities for knowing the diversities related to personality. Different Psychologists have classified the personality on the basis of different attitudes. Generally from the following points of view the kinds of personality have been divided. 1. Constitution Viewpoint, 2. Sociological Viewpoint, 3. Psychological Viewpoint.

5.4 Keywords

1. **Asthenic**—lean, weak.
2. **Ambivert**—both of the sides

Notes

5.5 Review Questions

1. In the context of Education-Psychology, explain the meaning and nature of personality.
2. Explain the different types of personality.

Answers: Self-Assessment

(1) (✓) (2) (×) (3) (×) (4) (✓) (5) (✓)

5.6 Further Readings

Books

1. Psychology—*Dr. Saryu Prasad, Agra Book Store, Agra.*
2. Development of Learner and Educational Learning Process—*A.K. Verma, Hindi Book Centre, New Delhi.*
3. Psychology—the study of human behavior—*Brij Kumar Mishra, PHI Learning Pvt. Ltd., New Delhi.*
4. Education Psychology—*S.K. Mangal, PHI Learning Pvt. Ltd., New Delhi.*

Notes

Unit-6: Measurement of Personality

CONTENTS

Objectives

Introduction

6.1 Methods of Assessment of Personality

6.2 Importance of Personality Tests

6.3 Summary

6.4 Keywords

6.5 Review Questions

6.6 Further Readings

Objectives

After the study of this unit, the students will be able to—

- Understand the methods of the assessment of personality.
- Understand the importance of personality test.

Introduction

According to the opinion of psychologists, personality has been called the collection of those virtues and traits, by which diversity is seen in different people. In the modern education, special importance has been given to personality differences. It is necessary for students to know the characteristics of personality for giving educational, occupational and personal direction, hence in the process of education; the importance of the evaluation of the personality is extended. Many methods and tests are used for the measurement of personality. We will think over some of the important methods and tests here.

6.1 Methods of Assessment of Personality

The methods and tests, that are used for assessment of personality, are following—

1. Subjective Method—In this method, the investigation of personality is done either by self examination or with the help of a familiar. Some following methods are used in it—

Notes

(a) Case History Method

(b) Questionnaire Method

(c) Interview Method

(d) Autobiography or Self History Method

2. Objective Method—The external conduct of man is studied under this kind of methods. These are following—

(a) Controlled Observation Method

(b) Rating Scale Method

(c) Sociometric Method

(d) Physiological Test

3. Projective Method—Projective Method means the method, in which a stimulating situation is presented before student, in which he sees his concepts, feelings, tendency and emotions in others and expresses his thoughts which are collected in his unconscious mind.

Did u know? Psychoanalysis calls this method a defence mechanism, in which a man expresses his repressed desires which are collected in the unconscious mind for some reason, by converting them into new ones.

As the irritation of the unconscious mind, is expressed by the scolding of others. In the projective method, student is asked to project his inner arising thoughts by the medium of external things. By the projective method, the personality related aspects are known, which are unknown to man. The popular projective methods are following—

(a) Thematic Apperception Test or T.A.T

(b) Children Apperception Test or C.A.T

(c) Rorchach Ink Blot Test

(d) Sentence and Story completion Test

4. Psycho-Analytic Method—Two methods come under this—

(a) Free word Association Test

(b) Dream Analysis

Above subjective and objective methods are introduced in short—

1. Case History Method—In this method, information related to man's physical health, physical characteristics, personality differences, social relations and family history etc are collected. This information is related to man's past, present and further coming possibilities. In this method, learner gets the information with the help of the different sources such as, parents, relatives, friends, neighbors and doctor. This method is used often for the prevention of psychological disease.

2. Questionnaire Method—A list of questions is prepared related to the different virtues of personality in this method, in which man has to reply in writing 'yes' or 'no'. This method is also called 'Paper Pencil Test'. With the help of this questionnaire, the characteristics and virtues of men as- interest, disinterest, confidence, social awareness, introvert tendency, tendency of dependence etc are tested.

The four main types of these questionnaires are following—

Notes

(*i*) Closed Questionnaire—'Yes' or 'No' is written against of each question in it. Student has to reply the questions by ticking one of them, as—

(a) Do you get puzzled on a trivial matter? Yes/No

(b) Do you like to meet others? Yes/No

(c) Do you want to remain behind on the social occasions? Yes/No

(*ii*) Open Questionnaire—The complete answer of the question has to be written in this questionnaire. as, What should be the motives of Indian democracy?

(*iii*) Pictorial Questionnaire—Some questions are presented in this questionnaire. Student has to reply the questions by putting a tick on different pictures.

(*iv*) Mixed Questionnaire—There is a mixture of above questionnaires in this questionnaire.

3. Interview Method—In this method, interviewer gets some important information from the student, which is helpful in understanding the characteristics related to his personality. This method is mostly used for the selection of government jobs.

4. Autobiography or Self History Method—In this method, examiner gives a topic to the student related to personality and tells him to write his personal history, reading it examiner expresses his thoughts that correspond to that man.

5. Controlled Observation Method—This method is used in the controlled situation of the psychological laboratory. Examiner studies the different activities and conduct and behavior of the students in it. On the basis of this, the characteristics of a student are known.

6. Rating Scale Method—In this method, the evaluation of the virtues related to personality is done by the man himself or the persons connected to him, that they express their opinion to him. Whichever virtue has to be tested, for the group division of that virtue, a line is equally divided among, 3, 5, 7 parts, whichever group gets the highest marks, student is considered to be like that, as—

Is he an honest child?

Quite honest	Honest	Average	Dishonest	Quite dishonest

Do you get trouble on trivial matter?

Always	Many times	Sometimes	Few times	Never

Whatever answer student wants to give, he can put sign on that.

7. Sociological Method—the social virtues of student are tested by this method, this type of questions are asked in it—

(a) Do you want to make your social circle limited to some special people? Yes/No

(b) Do you like to become leader or beginner in the community work? Yes/No

8. Physical Test—In this method with the help of different instrument, the physical traits of special student are studied.

1. **Plenthisomograph**—Blood pressure can be known through this instrument.
2. **Electro Cardiograph**—Heartbeats can be measured with the help of this instrument.
3. **Sphygmograph**—The movement of nerves system can be found with the help of this instrument.
4. **Pneumograph**—The movement of breathing can be measured with the help of this. The process of breathing is studied by it.
5. **Psycho-Galvanometer**—The changes that happens in the variation of skin are tested with the help of this instrument. In the emotional state, the electronic factors which found on the skin are increased or decreased, as, due to fear, feeling the thrill, feeling the trouble etc. in this way with the help of this instrument, the emotional changes that happen in man are understood. With the help of above instruments, the psychical traits of man his courage, bravery, devotion, timidity and Culprit tendency can be found out.

Notes

9. Thematic Apperception Test—(T.A.T) –Psychologist Murrey and Morgan had created this test. This is also called T.A.T. The traits of man are tested by this. 30 pictures are used in this test. In it 10 pictures are for women, 10 pictures for men, 10 pictures are for children. Generally last 10 pictures are used. In the first few pictures, which things are seen, are following—

1. A child playing on violin.
2. A girl who has some books in her hand, another woman staring toward her and a farmer doing work in the field at a distance.
3. On the right elbow, holding the forehead, a boy lying on the floor who has a gun.
4. Bowing down the head, putting the right hand on the head and holding the door with left hand.

In this way, in the other picture some events are sketched, in the beginning of the exam, examiner gives the following indications to the student—

1. Who are these people?
2. What happened in the beginning, on the basis of which his event is shown in the picture?
3. What is happening now?
4. What are these people thinking? What kind of feelings is arising in their mind? What will be its end?

Five minutes are given to complete the story. A man expresses his natural desires, emotions, thoughts, feelings and thoughts in these stories. This can be his real story. Examiner analyzes these stories and finds out the traits of man on the basis of it.

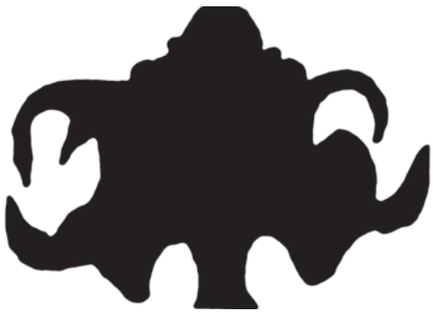
10. Children Apperception Test—This test is used for testing personality arrangement of the children. 10 pictures are used in it. These pictures are related to some animals, which are seen behaving like man. The information on different interests, activities, problems of children can be obtained by this test.

11. Rorschach Ink blot test—Herman Rorschach, The famous Psychologist of Switzerland invented this test. In this test 10 proofed ink blotted cards are used, five are quite black among them. Two are black and red; more colors are mixed in three cards.

Test Method—Examiner needs special training for using this test, before using the test; student is given some indications—

Different things are seen to different people in it, these blots are shown to you one by one. Watch carefully to each of the cards and tell me, what you see in it? You may see it as long as you want to see it, but say everything whatever you see in it, when you see it properly, return to me, showing one blot "What it can be?"

Fig. 20.1



Notes

After giving indication these cards are shown to students one by one. After seeing these blots, which type reaction student does, examiner notices his reaction.

Task After seeing this picture (20.1) say what are you seeing in it?

Analysis—the analysis of the answer of student is done on the basis of the four things—

1. **Location**—it is seen in it that student reacts to any special part of it or the whole.
2. **Quality**—It is seen in it that his reaction is according to the curvature in it or according to the movement or different colors.
3. **Content**—it is seen that student sees in it the figure of man or animal or other things or any landscape.

Self Assessment

Fill in the blanks:

1. In ..... method, personality is tested by examiner or his relatives.
2. In the objective method of personality test, the ..... of man are studied.
3. By the Sociometric method, the ..... of man is tested.
4. Rorchach test is also called ..... test.

4. **Time**—it is seen how much time student took in looking at each blot.

It is the opinion of the psychologists that the conscious and unconscious mind of man can be tested on the basis of above analysis. By this test the social awareness, emotional reaction, creativeness, the development of imagination power, adjusting capacity and personality related characteristics of man can be found out.

12. Sentence Completion or Story Completion Test—In this test, some incomplete story and sentences are presented in front of the student. He expresses his desires and emotions in these sentences and stories by the words and thoughts which have arisen in his mind and his personality can be studied on the basis of it.

13. Free Words Association Test—The internal condition of man can be known by this test. In this test 50 to 100 selected words are stimulating words. Examiner says one word in front of each student, as, house, water and sweet etc. He is encouraged for expressing all the words and thoughts whatever comes in his mind related to that word. Examiner continues to write the spoken words, each word, and the 'reaction period' on each word of student. And at last, on the basis of given responses, personality assessment is done.

14. Dream-Analysis—This method is used for doing psychiatry. In this method, a man is asked to write or express his dream after remembering it. In these dreams the knowledge of desires and feelings of unconscious mind of a man can be obtained. There are some complications in this method because a man cannot remember his dream properly. On the basis of the responses given by the man, it is tried to resolve his problem.

6.2 Importance of Personality Tests

Whatever works psychologists have done in the direction of personality tests, according to it many important methods have been used for the measurement of personality. Personality assessment is needed in the different working fields. The use of Personality- tests are done in the selection of the

students, army, and employees of different services and for the prevention of mental patient and for the solution and prevention of personal problem. With the help of these tests, after getting the information of interest, disinterest, natural virtues, internal condition, social and personal relations, and personality, guidance can be easily given.

Notes In the field of education, the importance of personality test is more from both, of teacher's and student's point of view. School life lays deep effect on the personality development of student. Hence after testing his personality, according to his personality differences, his syllabus, teaching method, etc can be managed. After studying personality of student, a teacher can provide help in his personality development.

On the basis of these tests, the causes of different problems of student, as, mental unhealthiness, backwardness, indiscipline can be found out. Thus, from the personality tests, personality related problems can be resolved and prevented.

At last it will be appropriate to say that human personality is so much complicated that it is not easy to do proper measurement of it and to find out the virtues of personality. Thus the methods of personality measurement and tests cannot be called completely valid and reliable. As psychologist Barnan has said, "The testing and assessment of personality is fraught with so many difficulties that even the application of the highest psychological skill cannot be expected to bring about rapid success."

6.3 Summary

- It is necessary for students to know the characteristics of personality for giving educational, occupational and personal direction, hence in the process of education; the importance of the evaluation of the personality is extended.
- Many methods and tests are used for the measurement of personality.

1. Aatmnisht law—it is used under the following methods—
   (a) Case History Method (b) Questionnaire Method
   (c) Interview Method (d) Autobiography or Self History Method
2. Objective Method—
   (a) Controlled Observation Method (b) Rating Scale Method
   (c) Sociometric Method (d) Physiological Method
3. Projective Method—
   (a) Thematic Apperception Test or T.A.T (b) Children Apperception Test or C.A.T
   (c) Rorchach Ink Blot Test (d) Sentence and Story completion Test
4. Psycho-Analytic Method
   (a) Free word Association Test (b) Dream Analysis

6.4 Keywords

1. **Internal knowledge**—Knowledge of Mind

Notes

6.5 Review Questions

1. Write the subjective methods of personality assessment.
2. Throw light on the objective method of personality assessment.
3. Throw light on the importance of personality tests.

Answers: Self-Assessment

1. Subjective 2. External conduct 3. Social virtues 4. Ink blot

6.6 Further Readings

Books

1. Education Psychology—*S.K. Mangal, PHI Learning Pvt. Ltd., New Delhi.*
2. Psychology—*The study of human behavior-Brij Kumar Mishra, PHI Learning Pvt. Ltd., New Delhi.*
3. Psychology—*Dr. Saryu Prasad, Agra Book Store, Agra.*
4. Development of Learner and Educational Learning Process—*A.K. Verma, Hindi Book Centre, New Delhi.*

Notes

Unit-7: Creativity

CONTENTS

Objectives

Introduction

7.1 Meaning of Creativity

7.2 Elements of Creativity

7.3 The Criteria of Creative Personality

7.4 Measurement of Creativity

7.5 The Construction of a Creativity Test

7.6 Some Tests of Creativity

7.7 Summary

7.8 Keywords

7.9 Review Questions

7.10 Further Readings

Objectives

After the study of this unit, the students will be able to—

- Understand the meaning and the elements of Creativity
- Understand the criteria of creative Personality
- Understand the measurement and the test construction process of creativity
- Obtain information about various creative tests.

Introduction

Everyday there are new inventions in this age of scientific, technological and industrial development. Where there is tireless effort of the scientists behind the majority of these inventions, their creativity has not contributed any less. Earlier it was believed that only writers, poets, painters, musician etc. were only the creative people, however it is now believed that creativity can be expressed in all spheres of human life.

Notes

In fact creativity is found in all livings beings in the world, some have less of it and some have more. In order to make the human life convenient, to do new inventions and to find solutions of problems, creativity plays an important role.

Creative people are required in today's complex and troublesome world. It has become a need of the nation to look out for creative people in order to have the scientific and technological achievements. Present chapter describes the meaning, and the methods of measuring creativity.

> *Notes* After the World War II, psychologists and educationists paid special attention to the credentials of creativity. Rapid scientific, technological, and industrial development and modernization has made human life so complicated and troublesome that, for the solutions of these problems, the need of creativity has begun to be felt in all spheres of life.

7.1 Meaning of Creativity

Various psychologists have defined creativity in various ways. Some main definitions of creativity are as follows:

According to **DeHann** and **Havinghurst**, "Creativity is the quality, that provokes a person towards the production of a new and desirable thing. This new thing can be new to the whole society or may be just for the person who produced."

In words of **Dravehel**, "Creativity is that human ability by which he can express any thought or creation."

According to psychologists **Crow & Crow**, "Creativity is a mental process of expressing original outcomes."

In the words of **Cole & Bruce**, "Creativity the ability and the process to understand, express and appreciate the human mind in form of original product."

It is evident from the analysis of above definitions that creativity is primarily related to originality and newness. Creativity aims at the effort of looking at the problems in a new way and finding solution. In other words, creativity is the ability which enables a person to think and reflect in a new way to find a smart solution for any problem. Aside from the popular ways, the ability of working and reflecting in a new way is the creativity.

7.2 Elements of Creativity

By looking and analyzing the definitions of creativity, we come to know that creativity could be understood in context of sensibility, curiosity, imagination, originality, searching, flexibility, fluency and elaboration etc. All these synonymous traits of creativity appear in scientific researches, artworks, music, creation, writing and poetry, painting etc creative works. There are four main elements of creativity—

(*i*) **Fluency**—By fluency we mean the multiple solutions on a problem. Fluency can further be divided into four divisions, Ideational Fluency, Expressional Fluency, Associative Fluency and Word Fluency. In the ideational fluency the free outpouring of ideas is encouraged, like telling the possible titles of a story, the uses of some item, or telling the ways to improve something. In the expressional fluency, the free outpouring of human expressions is encouraged, like making a sentence out of the given four words, or complete the given incomplete sentence. Associative fluency means to establish the association among the given words and things, like write synonyms and antonyms of the given word.

Word fluency is associated with words, like make words of the given suffixes and prefixes. The fluency of any creative test on any item by someone is often expressed by the number of responses over that item. In order to know the fluency scoreon a test, all fluency marks are added.

(*ii*) **Flexibility**—Flexibility means the variation in the responses or alternatives on given problem. This tells how much mutually different are the answers or the alternatives from one another that are presented by the person. The three dimensions of flexibility could be – Figural Spontaneous Flexibility, Figural Adaptive Flexibility, and Semantic Spontaneous Flexibility. Figural Spontaneous Flexibility means the flexibility in the solutions of improving any figure or an object. Figural Adaptive Flexibility means the flexibility in the methods of changing the form of an object or a figure into another. Semantic Spontaneous Flexibility means the flexibility in the uses of words or objects. Flexibility can be expressed by a person's different types of responses at any item on the test of creativity. In order to know the flexibility score of any person on a test, his flexibility marks on different items are added.

(*iii*) **Originality**—Originality means the uncommonness of the responses or alternatives presented by the person. It is observed how much different are the given responses or alternatives from popular responses and alternatives. In other words the originality is primarily related to newness. The person who presents the different alternatives from others is said to be original. Telling the new uses of a thing, writing titles of a story, poetry or an article, forecasting remote outcomes of changes, to discover some new symbols are all examples of originality.

(*iv*) **Elaboration**—By elaboration we mean the elaborate explanations of given thoughts or emotions, completion or presentation. There are two kinds of elaboration, Semantic Elaboration or Figural Elaboration. In the semantic elaboration, some brief event, process, or work situation could be asked, to be expanded, where as in the Figural Elaboration, a complete and meaningful figure is to be rendered out of incomplete figure or line by adding something.

7.3 The Criteria of Creative Personality

Torrance created a list of 84 personality traits of a creative personality after extensively studying the behaviors of many creative people. In the measurement of creativity, these 84 traits of creative personality can play an important role. These eighty four traits are below:

1. Accepts Disorder
2. Adventurous
3. Strong Affection
4. Awareness to Others
5. Attraction to Disorder
6. Attempts Difficult Jobs
7. Constructive Criticism
8. Deep and Conscientious Conventions
9. Altruistic
10. Always Baffled by Something
11. Attracted to Mysterious Discoveries
12. Bashful Outwardly
13. Courageous
14. Defines Conventions of Courtesy
15. Defines Conventions of Health

Notes

16. Desire to Excel
17. Determination
18. Differentiated Value-hierarchy
19. Discontented
20. Disturbs Organization
21. Dominant
22. Emotional
23. Emotionally Sensitive
24. Energetic
25. A Fault Finder
26. Does not fear being thought differently
27. Full of Curiosity
28. Appears self-satisfied at times
29. Likes Solitude
30. Feels whole parade is out of step
31. Independence in Judgment
32. Independence in Thinking
33. Individualistic
34. Intuitive
35. Industrious
36. Introversive
37. Lacks business ability
38. Makes Mistakes
39. Never Bored
40. Not hostile or Negativistic
41. Not Popular
42. Oddities of habits
43. Persistent
44. Becomes Preoccupied
45. Preference for Complex Ideas
46. Non-conformity
47. Keeps unusual Hours
48. A questioning ability
49. Radical
50. Receptive to External Stimuli
51. Receptive to Ideas of Others
52. Regresses Occasionally
53. Rejection of Suppression as a mechanism of Impulse control
54. Rejection of Repression

Notes

55. Resolute
56. Reserved
57. Self Aware
58. Self Confident
59. Self Sufficient
60. Sense of Humor
61. Sensitive to Beauty
62. Sincere
63. Shuns Power
64. Self Assertive
65. Self Starter
66. Sense of Destiny
67. Not Interested in Small Details
68. Speculative
69. Spirited in Disagreement
70. Strives for distant Goals
71. Stubborn
72. Temperamental
73. Tenacious
74. Tender Emotions
75. Timid
76. Thorough
77. Unconcerned about Power
78. Somewhat Uncultured and Primitive
79. Unsophisticated naïve
80. Unwilling to accept anything on mere say to
81. Visionary
82. Versatile
83. Willing to take risks
84. Somewhat withdrawn and Quiescent

7.4 Measurement of Creativity

Although creativity is a mental ability, yet the measurement of creativity is a complex work in comparison of the measurement of other mental abilities. The creativity comprises of many abilities of doing unique, explicit, wide and complex works. Therefore it is a difficult task to measure the creativity. In fact with help of just one test, the whole creativity of a person cannot be measured at all. That's why **Mc Neil** (1960) suggested that all factors of creativity should be measured with the help of separate tests. This is prerequisite before preparing any test to measure any factor or constituent of creativity, that, this factor or constituent of creativity shall be implicitly and objectively defined. All traits of creativity and the criteria of creative personality have been already described. Hargreaves,

Notes

Thurstone, Wilson, Tailor, Guilford, Marrifield, Holland, Kent, Harrish, Owen, Torrance etc have given significant contribution in the efforts of measurement of creativity. 'Creativity Test for College Students' by Guilford and Marrifield, 'Creativity Test for School Students'by Holland and Kent, 'Minnesota Test of Creative Reflection' by Torrance became very famous. In India, the creative tests developed by B.K. Passi and Baqer Mehdi have received considerable success.

Although many tests have been prepared to measure the creativity, yet these creative tests have failed to prove any practical usefulness. Credibility of most of the tests is doubtful, the coefficient of tests and re-tests' credibility has been often found between 40 and 75. The Predictive Validity of these tests has reduced greatly. Score on the various tests of creativity are not closely and mutually correlated. That's is why the credibility and the validity of scorefrom creativity tests cannot be considered satisfactory. Still, until more credible and valid methods of measuring creativity are developed, the measurement of creativity will be done on the basis of available tests.

7.5 The Contruction of a Creativity Test

Like the development and measurement of other tests, in the development of creativity test, planning, preparing questions, selecting question by analysis of items, evaluation of test are the four major steps that are followed. The work done under these four steps is roughly same as displayed during the construction of any Acquisition Test or Intellectual test. Often, in order to select the items for creativity tests, item validity and item discrimination is established and for this, the correlation coefficients between test score and items score are calculated and the comparison of high and low creative groups with respect to item scores, the T values are calculated. While calculating the validity and item discrimination, most of the test creators use the creative scores given by the test items. This process of item analysis for the measurement and construction of creativity test does appear to be appropriate. In fact there is some fundamental difference between the acquisition, intellectual and the nature of creativity test. Because of which using the similar method of item analysis for both of these tests is not right from the psychometric viewpoint.

Self Assessment

Choose the right option:

1. How many qualities has Torrance told of the creative personality.
   (a) 40 (b) 62 (c) 84
2. How many elements there are in creativity.
   (a) 6 (b) 4 (c) 5
3. "Creativity is a mental process of expressing original outcomes." Who has given this definition.
   (a) Crow and Crow (b) DeHann (c) Bruce
4. The psychologists who prepared the successful creativity test in India are.
   (a) Dr. Bhatia & Jain (b) Passi & Baqer Mehdi (c) Crow & Crow

In Acquisition and Intellectual test there is only once answer to the given question, and the student is awarded only one mark over one question. The Acquisition test or Intellectual test score is counted by calculating the individual marks. However this does not happen in the creativity test. In creativity test there could be many reactions by the applicant. Hence the applicant is encouraged to give many reactions. The evaluation of these reactions is done on the basis of his ability to think in a new way and imagination instead of True and False. Three or four kinds of scores are given on the viewpoint of different parameters (Fluency, Flexibility, originality etc) over the reactions given on the same question. In this fashion we get many other scores (for Fluency, Flexibility, originality etc) along with the creativity

score for any person. These scores obtained on any question or total tests are obtained by analyzing the same reaction/reactions in different manners. For instance if a student has given total four reactions over any question of creativity test, then for fluency he may get 4 marks for fluency, 3 for flexibility and 2 for originality. It is evident that the number of responses have been taken into consideration first time while awarding the score, secondly the types of nature of the responses has been observed, and thirdly the uniqueness of the responses has been taken into consideration. The total score of these three score will be the score of the creativity on that question. Surely the creativity score will indicate the Global Creativity of any person over that question. But on the basis of this, we do not get the Fluency, Flexibility or Originality of that person over that question, however various responses are measured in this fashion. Hence selecting the question by analyzing the items with the help of creativity score does seem desirable.

It could be said that even in Acquisition and Intellectual Test only dimensional scores are obtained, which after addition provide the total Acquisition or Intellectual Score. But the nature of these scores so obtained and the score obtained in creativity test is significantly different. In Acquisition or Intellectual tests, the dimensions are created by dividing the content, and any question can come under one dimension only. Student gets only one mark over one question, which only contributes to the score of that dimension. It has no contribution in any other dimension. Obviously, in such a situation, dimensions are mutuall1y independent. On the contrary, under the creativity test, the dimensions, instead of depending on the division of the content, depend on the analysis of the reaction on the basis of various parameters. The responses given over any question provide the scores of all the dimensions. As result by calculating the creativity score by adding the dimensional scores becomes more practically appropriate, however it is un-appropriate to accept it for item analysis from the viewpoint of statistics. The item analysis for creativity test shall be to select such questions which are capable of provoking the more and more manifestation of a person's fluency, flexibility and originality. For this, some other distinct specific method shall be followed of item analysis. In other words either a total score shall be obtained for creativity instead of obtaining the distinct scores for fluency, flexibility or originality or item analysis should be done with respect to different dimensional scores. If only the creativity scores are to be obtained, then, item validity and item discrimination could be known from the simple methods, the questions with more item validity and item discrimination could be included in the final blue print of the test.

In order to do the item analysis of the test that cause the fluency, flexibility and originality score of the creativity test, some specific methods shall be used. There could be two options for it. According to the conventional thinking of test creation, under the first option, such questions could be selected by analyzing the items validity and item discrimination for every question which are valid or discriminate with respect to all dimensions. Definitely then we shall find the various item validity or discrimination coefficients (one of each dimension of creativity) for the same question. And item will selected on the basis of these coefficients. This method of computing the item validity or item discrimination by doing the item analysis separately for all dimensions seems unfeasible with respect to time and effort.

By looking at the nature of the dimensions of the creativity test, it could be said the objective of creativity test is to bring out the hidden creativity of a person, so that fluency, flexibility and originality could be measured in his personality. Because the responses given over a question by a person is not true or false, therefore if two people give the same number of responses over the same question, then the scorewith respect to different dimensions could be different as well as the creativity score. In the same fashion two people can given distinct number of reaction over the same questions and yet there score could be same. In this scenario, as per the writer, the only basis for selecting question while doing the item analysis by establishing item validity and item discrimination , shall be the ability of the questions to invoke the reflection in the applicant with respect to fluency, flexibility or originality. In other words, the question which are more capable of invoking manifestation of creativity with respect to fluency, flexibility and originality, shall be included in the test being developed for the measurement of creativity. Definitely the mean of scores on any question of some large groups of the people over the different dimension of creativity on any question will indicate the ability of that question to invoke manifestation of creativity. The higher mean on any question with respect to fluency, flexibility and originality indicates that this question has been able to invoke the greater manifestation of these dimensions.

Notes

Did u know? The measurement of any ability is to measure the individual diversity. Therefore the creativity included such question which may invoke difference in these people.

On any question, the elaboration of the dimensional scores or the standard deviation by people will be the indicators of the ability of discrimination over the different dimension of that item among people. If the standard deviation of dimensional scores is higher, this indicates that the heterogeneity is more in the group over the scores obtained on that dimension. It is evident that more is the standard deviation on the scores of fluency, flexibility and originality over any question means the ability to discriminate people on the basis of these qualities. Hence only the questions that should be included in the creativity test for which the mean various dimensional scores and the standard deviation are higher. These questions shall be able to provoke the creativity of the people in larger extent as well as shall be able to discriminate them over various creative abilities. Hence it could be said as a result that while doing the item analysis for the creativity test, different scores over different dimensions of these questions shall be obtained beforehand. Then the standard deviations shall be calculated for the different dimensions. Thereafter such questions shall be selected for which the standard deviation and the mean deviation over all dimensions are higher.

7.6 Some Tests of Creativity

As it is already discussed that many tests have been developed and tested for the measurement of creativity, a brief description has been presented for the knowledge of the readers.

1. Guilford and Merrifield Test for College Students

According to Guilford and Merrifield in creative thinking, the abilities of Divergent Production, Transformation , Re-Definition are present. He prepared a test to measure the creativity of the college students, in which he included six main factors:

(*i*) Sensitivity towards any problem

(*ii*) Flexibility

(*iii*) Fluency

(*iv*) Originality

(*v*) Elaboration

(*vi*) Re-definition

2. Torrance's Tests of Creative Thinking–TTCT

This series of test prepared by Torrance has two main tests—First, Verbal test which is called thinking creatively with the words, and the other one is, Figural test, which is called thinking creatively with the figures. In this series of test there are four main functions—

(*i*) To ask as many questions as possible regarding any question

(*ii*) To suggest changes for the improvement of any toy

(*iii*) To tell many uses of a simple item

(*iv*) To draw a picture around some given curve line and suggest its title

This test awards four different scores , fluency, flexibility, originality and elaboration.

3. Passi's Tests of Creativity

This creativity test, developed by Prof. B.K. Passi from Indore 1972, has six sub tests—

(*i*) Seeing Problem Test

(*ii*) Unusual Uses Test

(*iii*) Consequences Test

(*iv*) Test of Inquisitiveness

(*v*) Square Puzzle Test

(*vi*) Blocks Test

It is evident that this test includes both, verbal and non-verbal tasks. On this test, along with the creativity score we get fourteen dimensional scores as well. However the manual for this test is in English only however test booklets are available in Hindi & English both.

Task Which test do you think is the most effective covered in this unit, and why?

4. Baqer Mehdi Test of Creative Thinking

This creativity test series, by Baqer Mehdi of Aligarh., has two tests (*i*) Verbal test of creative thinking (*ii*) Thinking Creatively with Figures. The first test is a verbal test, there are four main functions that are carried on:

(*i*) Consequences Test

(*ii*) Unusual uses Test

(*iii*) New Relationship Test

(*iv*) Product Improvement Test

With the help of this test, the three factors of creativity, namely Fluency, Flexibility, and Originality are measured.

The other test created by Baqer Mehdi which is a non-verbal test, has three main steps—

(*i*) Draw a picture

(*ii*) Complete picture and suggest title

(*iii*) Triangular and Elliptical shapes

This test helps in measuring the two main factors of creativity, Elaboration and Originality.

7.7 Summary

- Everyday there are new inventions in this age of scientific, technological and industrial development. Where there is tireless effort of the scientists behind the majority of these inventions, their creativity has not contributed any less. Earlier it was believed that only writers, poets, painters, musician etc. were only the creative people, however it is now believed that creativity can be expressed in all spheres of human life. In fact creativity is found in all livings beings in the world, some have less of it and some have more. In order to make the human life convenient, to do new inventions and to find solutions of problems, creativity plays an important role.
- In words of Dravehel, "Creativity is that human ability by which he can express any thought or creation."
- It is evident from the analysis of above definitions that creativity is primarily related to originality and newness. Creativity aims at the effort of looking at the problems in a new way and finding solution. In other words, creativity is the ability which enables a person to think and reflect in a new

Notes

way to find a smart solution for any problem. Aside from the popular ways, the ability of working and reflecting in a new way is the creativity.

- Although creativity is a mental ability, yet the measurement of creativity is a complex work in comparison of the measurement of other mental abilities. The creativity comprises of many abilities of doing unique, explicit, wide and complex works. Therefore it is a difficult task to measure the creativity.
- This is prerequisite before preparing any test to measure any factor or constituent of creativity, that, this factor or constituent of creativity shall be implicitly and objectively defined.
- Although many tests have been prepared to measure the creativity, yet these creative tests have failed to prove any practical usefulness. Credibility of most of the tests is doubtful.
- By looking at the nature of the dimensions of the creativity test, it could be said the objective of creativity test is to bring out the hidden creativity of a person, so that fluency, flexibility and originality could be measured in his personality. Because the responses given over a question by a person is not true or false.
- Many Tests have been developed and tested for the measurement of creativity. Some tests are as follow—
- Guilford and Merrifield's Test of Creativity for the College Students, Torrance Test of Creative Thinking, Baqer Mehdi's Test of Creative Thinking.

7.8 Keywords

1. **Altruistic**—Inclined towards good of others
2. **Dimensions**—Measureable Extent

7.9 Review Questions

1. Explain Creativity and through some light on its element.
2. Through some light on the qualities of a creative person.
3. Explain the process of creative test development process.
4. Explain the Creative tests of Passi's and Baqer.

Answers: Self-Assessment

1. (c) 2. (b) 3. (a) 4. (b)

7.10 Further Readings

Books

1. Education Psychology—*S.H. Sinha and Rachna Sharma, Atlantic Ocean, New Delhi*
2. Importance of Education Among children and Information—*Seema Chopra, Hindi Book Center, New Delhi*
3. Development of Learner and Teaching Learning Process—*By A.K. Verma, Hindi Book Center, New Delhi*
4. Education Psychology—*S.K. Mangal, P.H. I. Learning Pvt. Ltd, New Delhi.*

Notes

Unit-8: Mental Health

CONTENTS

Objectives

Introduction

8.1 Meaning of Mental Health

8.2 Meaning of Mental Hygiene

8.3 Factors which Adversely Affect Child's Mental Health

8.4 Summary

8.5 Keywords

8.6 Review Questions

8.7 Further Readings

Objectives

After the study of this unit, the students will be able to—

- Understand the meaning of mental health and mental hygiene.
- In getting the information about the factors which adversely affect child's mental health.

Introduction

Mind has an important place in the human body, because whatever works a man does, he does it according to the indication of his mind or following his mind. Until our mind is healthy, we cannot do any work properly. The people whose mind is not healthy, they do not face the different situation in life easily. They always live in mental trouble or problem. Mental weakness and specific changes are the cause of it. Today the life of man is so much complicated. He has to face difficulties and disappointment at every step. He does not adjust himself in the society because of mental troubles. It is important for a man to be mentally healthy in such condition. The man, whose mental health is good, adjusts himself in the material and social situation. It is important in the human life to pay attention towards the mental health like physical health.

Physical health and mental health affect one another. So under education psychology, the study of mental health keeps important place, because for making the education process success, the mental health of both, teacher and student, after thinking the nature of science, the factor influencing the mental health and throwing light on the efforts of progressing in the mental health, we will discuss the importance of mental health.

Notes Under the education psychology, the remedy of personality development is pondered upon. The development of man is possible, when the mind and body is completely healthy, because body and mind are closely related.

8.1 Meaning of Mental Health

It is identified from the above thoughts that a man can adjust himself in the different situation of life by mental health. For clearifying the meaning of mental health psychologist has given following definitions—

1. Headfield—"In the general terms we may say that mental health is the full harmonious functioning of the whole personality.''

2. Ledell—"Mental Health means the ability to make adequate adjustment to the environment on the plane of reality.''

3. Kuppuswamy—"Mental health means, the ability to balance feelings, desires, ambitions and ideals in one's daily. It means the ability to face and accept the reality of life.''

8.2 Meaning of Mental Hygiene

Mental health has been given the name of 'Mental Remedy'. Mental hygiene means the science of keeping mind healthy. As the physical hygiene is related to the health of body, so the mental hygiene is related to mental health.

So that the personality may be developed balanced, by which man could be able in the adjustment of both types of easy and difficult situation of life. Psychologists have given definitions for explaining the meaning of this science—

1. Drever—"Mental hygiene means investigation of the laws of mental health and taking of measures for its preservation."

2. Head Field—"Mental hygiene is concerned with the maintenance of mental health and the prevention of mental disorder.''

3. Crow & Crow—"Mental hygiene is a science that deals with the human welfare and pervades all field human relationship.''

Rojanoff A.J.—"Mental hygiene endeavors to aid people toward of the trouble as well as to furnish ways of handling troubles.''

Kolesnik—"Mental Hygiene is a set of condition which enables a person to live at peace with himself and others."

In Webster's Dictionary, The meaning of mental hygiene has been explained in this way.—"Mental hygiene is the science, by which we keep mental health stable, and prevents the growth of diseases related to madness and nerve system. In the general health hygiene, only attention is paid over the physical health, but in the mental hygiene physical health is also included along with the mental health, because mental health is not possible without physical health.''

According to this statement, it is important in this type of educational process that teacher and student both should be mentally healthy. If there is no mental health the child does not get success in acquiring education and teacher does not success in the educational work, so it necessary to think over the causes of their mental disease and the solution of maintaining good mental health.

Notes

Did u know? Under the mental hygiene the rules and use of keeping health fitness are studied.

8.3 Factors which Adversely Affect Child's Mental Health

There are many factors which adversely affect child's mental health. These factors are following—

1. The Effect of Heredity—Some children are mentally weak because of faulty heredity, as lack of intelligence or nerve related diseases are found. Thus he is mentally ill.

2. Effect of Physical Health—Physical health is closely related mental health. Patient feels complication with the adjustment of new situations.

3. Effect of Physical Defect—Accident or diseases cause physical defect or illness. Physical defects generate the feeling of deficiency in the children. The feeling of deficiency generates the problem of adjustment with their friends and society for them.

Self Assessment

Select the correct alternative:

1. Who has given the following definition of mental hygiene—

   "Mental hygiene is the science which tells about human welfare, and affects all the fields of human relation."

   (a) Headfield (b) Crow & Crow (c) Drever

2. "Generally we can say that mental health is to do work of complete adjustment of the whole personality."

   (a) Ledell (b) Kupposwamy (c) Headfield

3. "Mental health means- the ability to make adequate adjustments to make the environment on the plane of reality."

   (a) Webster dictionary (b) Ledell (c) Drever

4. **Causes Related to Family:** The following factors related to family effect the personality of children—

   (a) The Environment of Family—If there is personal conflict and dispute in the family, it affects the child badly.

   (b) Poverty of Family—If the economical condition of family is not well, the children are irritated and strict, they have the feeling of lack of security, lack of confidence and deficiency. All these things affect health badly.

   (c) The Strict Disciplines of Family—If the children are scolded over a trivial matter, the sense of deficiency create in them and they are mentally unhealthy in such kinds of environment.

   (d) Inappropriate Favor of the Family—If the parent in the family like other child very much and neglects one, this child is affected badly. The child, who is ignored, has the feeling of jealousy with the other children of family. The disputing tendency generates in them. They always try to harm other.

   (e) The Beloved Child of Parent—Parents loves more the child, who is only or hardly alive or if the parents are rich. This thing also harms the child. They have lack of self confidence and they are unable to face the difficulties of life.

Notes

(f) **The Effect of High Morals of Parent**—In the family whose parents have high morals and ideals, and always hope for their children to follow those morals in their conduct. Stressing under the burden of these morals and ideals children have to face these difficulties. They always move in the world of reality, away from this world. Thus they could not solve the problems of this world. The feelings of complexities create in them. There is always conflict in their mind between reality and ideal. Consequently their nervous system is always affected. The diseases of nerve generate in them.

Task 'Healthy mind lies in healthy body'. Think over the significance of healthy mind from in this statement.

5. Psychological Causes—In spite of having above causes of mental sickness, some causes are such psychological, which help in the growth of mental sickness and mental ailments, which are called mental conflict, emotional tension, feeling complexities, anxiety, mental weakness and tiredness. All these things have been described earlier. All these affect badly on the mental health of child.

6. Society Related Causes—The defective organization and environment of the society also affect the mentality of child. The mental health of the children of unorganized society are not well, because there is always fight, dispute and different kinds of evils are presented in the environment of this society. The children, who grow in these types of environment, are very, emotional unstable, full of jealous, hate, chaos and conduct less. The racial and religious conflict of society, the feeling of high and low, the feeling of jealousy, hatred, incorporation in the different community, generate the feeling of mental tension in the mind of children. The condition of this type of society and environment is harmful for the mental health of children.

7. College Related Causes—After family, the mental health of child is also affected by the undesirable effect of college, which is described in this way-

(a) **The Environment of College**—If there is so much control on the student in the college, his desires are stressed, or it is not allowed him to take part in the cocurricular activities of college, this generates obstacle in his mind. There is always the environment of fear and strict discipline, child is always mentally unhealthy.

(b) **Defective Syllabus**—If child does not get the syllabus according to his interest and ability, he does not take interest in it and gets failure in the examination. And his mental health is affected. When he does not learn the subject-syllabus, he is always worried and fearful that he will be punished. Such child lives in the mental depression and victim of criminal tendency. And often the runs away from the college.

(c) **In Proper Education Method**—If teacher uses un-psychological method, not paying attention on the individual difference, it is difficult for child to get knowledge and when he does not learn anything he gets disappointed.

(d) **Defective Examination-System**—In the current times subjective tests are popular, in which the real ability and progress of student is not known, on account of having many defects in the examination, child does not get success in the class and fortunately unworthy student gets success with high marks. In this condition intelligent student is discouraged and lose self confidence. And dull child does not take interest in the study. Such types of children cannot adjust themselves with the society.

(e) **Feeling of Competition**—Competition feeling, which is the feeling of jealousy, hatred, also affects the mental health of children.

Notes

(f) Effect of Personality of Teacher—If teacher has emotional instability, he does not behave well with the student. His behavior is strict and full of partiality. Then the mind of child is not balanced. Child is either more proud or wicked or always lives in fear. And becomes the victim of feeling of complexity.

8.4 Summary

- Mind has an important place in the human body, because whatever works a man does, he does it according to the indication of his mind or following his mind. Until our mind is healthy, we cannot do any work properly.
- The men, whose mental health is good, enable to adjust themselves with the material and social situations in the world.
- Under the education psychology, the remedy of personality development is pondered upon. The development of man is possible, when the mind and body is completely healthy, because body and mind are closely related.
- Mental health has been given the name of 'Mental Remedy'. Mental hygiene means the science of keeping mind healthy. As the physical hygiene is related to the health of body, so the mental hygiene is related to mental health.
- In Webster's Dictionary the meaning of mental hygiene has been explained in this way. "Mental hygiene is the science, by which we keep mental health stable, and prevents the growth of diseases related to madness and nerve system. In the general health hygiene, only attention is paid over the physical health, but in the mental hygiene physical health is also included along with the mental health, because mental health is not possible without physical health."
- According to this statement, it is important in this type of educational process that teacher and student both should be mentally healthy. If there is no mental health the child does not get success in acquiring education and teacher does not success in the educational work.

8.5 Keywords

1. **Adjust**—Adapt according to need and situation.

8.6 Review Questions

1. What do you know by mental health?
2. What is mental hygiene? Explain with the definitions.
3. Explain harmful factors, which influence badly on the mental health.

Answers: Self-Assessment

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

Notes

8.7 Further Readings

Books

1. Psychology - the Study of Human Behavior — *The Importance and Information of Education in the Children – Seema Chaupra, Hindi Book Center, New Delhi.*
2. The Development of Learner and Teaching Learning Process — *A.K. Verma, Hindi Book Center, New Delhi.*
3. Education–Psychology — *S.K. Mangal, P.H.I Learning PTV, New Delhi.*
4. Education–Psychology — *S.H. Sinha and Rachna Sharma, Atlantic Publications, New Delhi.*

Notes

Unit-9: Meaning and Characteristics of Stress

CONTENTS

Objectives

Introduction

9.1 Meaning and Characteristics of Stress

9.2 Reactions of Stress

9.3 Factors In fluencing Reactions to Stress

9.4 Measurement of Stress

9.5 Sources or Causes of Stress

9.6 Strategies for Coping with Stress

9.7 Management of Stress

9.8 Summary

9.9 Keywords

9.10 Review Questions

9.11 Further Readings

Objectives

After the study of this unit, the students will be able to—

- Understand the meaning and characteristics of stress.
- Understand the reaction of stress.
- Understand the factors influencing reactions to stress.
- Understand the measurement, source and causes of stress.
- Understand the strategies for coping stress and the management of stress.

Introduction

Stress affects the human life for a long time. When we are dissatisfied, we come under stress and until we solve this problem, the situation of stress is same. Under the educational psychology, along with the strategies of understanding the process of stress, the measurement, coping and resolving of stress are also suggested.

Notes

9.1 Meaning and Characteristics of Stress

Stress is a big problem of our society. It is known from modern researches that stress is the cause of the illness of 75% people. Even stress is the cause of dangerous disease like heart attack and cancer. The question is that, what is the meaning of stress? Psychologists have admitted different attitudes for defining stress.

(*i*) Some psychologists have tried to understand the stress, as the factors of stimulus and have said that any event or situation that insists a man for doing abnormal responses is called stress. Events as- earthquake, leaving the job, destroy the business, death of loving person are the main events, which create stress in a man. Such materials, social and environmental factors, which create stress, are called stressor.

(*ii*) Some psychologists have tried to explain the stress as a response. Here psychologists have delivered physical and physiological responses done by man in the difficult situations. When a man shows this type of special psychological responses as – anxiety, anger, aggression and physiological responses as—stomach is not fit, do not take the sleep, shooting the blood pressure, we call that this man is under stress. A popular psychologist Hens Selye[1], in 1979 of this field has said, defining stress in the form of response—"Stress refers to nonspecific responses of the body to any demand made upon it." The main characteristics of this definition, stress has been defined as a non specific response, by which Selye means that such responses are not related to stimulus, which produce any specific stress, but same types of response can be produced by any stimulus of producing stress.

(*iii*) The third batch of psychologists, who defined stress not only as a stimulus not as a response but also tried to define it on the basis of its relationship. This approach is called transactional approach. Psychologists consider it that some events or situation are definitely such, which are stressful for men. There are some situations and events which can create stress in some men, hence stress cannot be defined meaningfully as a stimulus in the same way the responses of stressful events, even that physiological responses can be affected easily. So stress can be understood in the form of only stress. According to transactional approach, it is necessary to know that how does a man evaluate the events and situation in the form of present material for the solution of his needs or motives and similar situations. In the other words according to this approach stress reflects a specific relationship between man and environment (by which man feels fear and his materials get challenged. The followers of this approach are Lazarus and Folkman, 1984 and Taylor, 1991

Morgan, King, Weize and Schopler[2], in 1986 have given a good definition of stress by collecting the thoughts of Lazarus, Folkman and Taylor etc." We will define stress as an internal state which can be caused by physical demands on the body (diseases, conditions, exercise, extremes of temperature and like) or by environmental and social situations which are evaluated as potentially harmful, uncontrolled or exceeding our resources for coping." In the same way Wood and Wood 1999[3] have defined stress – "Most psychologists define stress as the psychological and physiological responses to a condition that threatens or challenges the individual and requires some form of adaption or adjustment."

1. "Stress refers to nonspecific response of the body to any demand made upon it."

—Hans Selye: The stress of life, 1979, p. 40

2. "We will define stress as an internal state which can be caused by physical demands on the body (diseased conditions, exercise, extremes of temperature and the like) or by environmental and social situations which are evaluated as potentially harmful, uncontrollable or exceeding our resources for coping".

—Morgan, King, Weisz and Schopler, Introduction to Psychology, 1986, p. 321

3. "Most psychologists difine stress as the physiological and psychological response to a condition that threatens or chellenges the individual and requires some form of adaptation or adjustment."

—Wood and Wood : The World of Psychology, 1999, p. 469

Notes

Baron[1] (1992) has defined the stress in this way—" Stress is manifested process that occurs in us in response to events that disrupt or threaten to disrupt our physical or psychological functioning."

If we analyze above both extended definition of stress, the following characteristics about the nature of stress will be highlighted—

1. Stress is a multi-faceted process, which is a process towards the evaluation of stressors which is done by stressors.
2. Generally it is known that stress is the result of negative events and unfortunate events, but it the fact that it is also caused by the positive events, as – to get married in a high standard family, progress with a good job, and get some special reward or prize which creates stress in a man are some events. That's why popular psychologist Hans Sally has divided stress into two parts- positive stress and negative stress. He has called negative stress, stress and Distress to the negative stress. So stress has been called multi faceted process.
3. Whatever events happen in stress (which produce stress) those events are out of control of a man, if in any case, situation is under control of man, stress turns into relaxation.
4. There are both types of responses in stress as physiological and Psychological. In other words, a man feels disturbance psychologically and mentally in stress.
5. Stress can be over after some time or can be lived for a long time. It is mostly dependent on the nature of events and situations which cause stress.

It can be concluded that stress is a special response, which happens towards the stress after the evaluation of events and situation of stress, in which a man finds his physical and mental work.

9.2 Reactions to Stress

When a man is under stress, he feels it and does response toward it. It is important to keep in mind the following points for understanding this type of response.

(*i*) Man responses properly for stress. It means that stress not only creates one type of reaction but also both types of reactions as psychological and physiological. Stress affects many part of nervous system of man, as- autonomic nervous system, which controls the psychological types of body as emotion and motives which include the function of internal excretion gland. The stress affects the both types of actions of man as physiological psychological.

(*ii*) Whether stress is physiological or psychological for a man, the reaction of the mind and body of man toward stress is not same. Every source of stress creates a specific type of coping reaction. A general reaction creates in the mind of man toward all types of stress, which depends on the response of internal relationship, as- automatic, adrenal gland and the sympathetic system.

Man does two types of responses in stress, which is following—

(a) Psychological Reaction

(b) Physiological Reaction

The details of both types of reactions are following—

(a) Psychological Reactions—There are many kinds of physiological and psychological reactions in stress. In other words, disruption is found in the physiological works of man in stress. All these disruptions are divided into two parts.

1. "Stress is many-facted process that occurs in us in response to events that disrupt or threaten to disrupt our physical or psychological functioning"

—Baron: Psychology, 1992, p. 443

Notes

1. Cognitive Impairment—Clear cognitive impairment is found in stress. The capability of concentration is less in man. And he does not organize his rumination logically. The role of anxiety increases in rumination, and he does not observe the different prospects properly. The expeditions of hindrances are less. And ephemeral increases in concentration. Memory gets weak by it. In other words, abnormality comes in the cognitive woks of man it has been identified from the psychological researches that in the stress situation a man shows something that practical pattern as that is done by him in the past. As the man, who have the tendency of caution and awareness for a long time, they become more caution and aware in the situation of stress. And the men who are aggressive, their aggression grow more in the time of stress, and the clear proof of aggression are found in their behavior. the cause of it has been said that this type of cognitive impairment causes because of stress that man does observe the alternative means of the solution of problems and shows rigidity in his behavior.

2. Emotional Responses—A man does different types of emotional response especially negative response in stress. Such emotional responses are following:

(*i*) **Anxiety**—When a man surrounds with stressful situations, whichever emotional responses occur in him during the first time, is called anxiety. Anxiety is such an unlovable stage in which fears, doubts and troubles are found in man. There are two types of anxiety–normal and neurotic. The nature of general anxiety is adaptive, and this type of anxiety helps man in adapting with the situation, causing stress. In the neurotic anxiety a man fears from the situation causing stress or comes in doubts, by which the capability of resolving it or coping with the situation is finished and he feels himself alone. According to Freud, "the reason of anxiety is unconscious conflict."

(*ii*) **Anger and Aggression**—There is also one another emotional response towards the situation causing stress. After that a man does aggressive behavior, it is identified by the study of researches done on the animals and men that in the starting, anger generates in the man towards the stimulus and situation causing stress. If such types of stimuli are kept in front of man for a long time, then he starts aggressive behavior towards them.

Did u know? It has been identified by the study done on the children when he is stopped on reaching goal, one type of frustration is found in him and frustration gives birth to aggressive behavior and they show aggressiveness towards the goal.

Sometimes goal or sources, that create frustration in a man, are not clear. In this situation man does not know that he should attack on the things, but he is under anger. In this condition, showing his aggression he searches for proper things. Sometimes it happens that the source of arising frustration is powerful therefore man does not show aggression towards it. In all these situations, the aggression of man is towards any special person and things, not towards the real things or person. This type of aggression is called displacd aggression.

(*iii*) **Empathy and Depression**—Some people do not have the feeling of aggression and anger but on the contrary the feeling of empathy and depression developed in them. Generally it has been observed that if the stressful situation is presented in front of a man and he does not succeed in resolving it, the feeling of empathy and depression is developed in him, which creates depressive tendency in him. It has been identified from the psychological studies that a man learns the reaction, which is done towards the stimulus causing frustration, like other behaviors. As the man, who does not get success by showing aggression towards the situations causing stress, he learns the responses of living in distress towards it, and gradually tendency, shown in it becomes powerful. It is also identified from the researches that are done on animals

and men, that a man is surrounded with the situations he finds himself helpless. The concept of learned helplessness is also developed by these studies, in which the contribution of Seligman is important.

(b) Physiological Reaction— A man does physiological reactions towards the situation or stimulus causing stress. Often it is seen that after surrounded by the stressful situation, the stomach of man is disturbed and heart beats become abnormal and changes in nerves system. All these are the example of physiological reactions. Such physiological reactions can be studied by dividing into two parts—

1. Emergency Responses— There are some of these responses that happen in the body of man towards the stimulus causing stress, they are called emergency responses. By the medium of such responses, liver create more quantity of sugar in the body, by which the muscles of body got more strength. Some hormones start to grow in body, which turn fat and protein into sugar and man gets enough energy for the physical works and there is growth in the heart beats, blood pressure and nervous system of man. There is stress in the muscles of body. And there is enough consumption in the quantity of mucus, so that there is no hindrance in the way of entering of more air in lungs. Perhaps that's why man feels dry in his mouth in the stressful situation. Endorphin, which is an antipathy, the quantity of it grows in body. And the blood tubes, which are found in the lower part of body, are shrieked in body, by which the resolving of stressful situation, if there is cutting in the body of man, less blood comes out of the body of man. And the spleen of body creates red tissue in the blood in a great quantity. So that body can get more oxygen. Therefore there is more creation of white blood tissues than bone marrow, so that body can face any kinds of infection properly.

There is only one motive of all kinds of emergency responses- to face properly with the situation that causes stress and make adjustment with them. All these physiological responses are controlled with the help of autonomic nervous system, endocrine gland and specially pituitary gland. Often in this condition autonomic nervous system does his work under hypothalamus. The pattern of this physiological responses, are complicated and innate. Canon has said 'fight and flight responses' because such responses prepare man for fight or flight. Seyle has called it 'Alarm responses'. Because such responses prepare a man for fighting and flighting.

2. General Adaptation Syndrome or GAS— Selye has delivered the concept of GAS. Selye has described the physiological changes that happen in the body of animals in the stressful situation. Although this types of changes are found in the animals, yet Selye thinks in this way that such types of changes are also found in the human body. If they are surrounded with the stimulus, causing stress for a long time. The changes that happen in GAS are divided into three stages that are following-

(*i*) Stage of Alarm Reaction.

(*ii*) Stage of Resistance.

(*iii*) Stage of Exhaustion.

All these stages are described in this way—

(*i*) Stage of Alarm Reaction— When a man is surrounded with the situation or event causing stress, which is called stressor. And affected by it the changes that happen in his body, the first time, that are called alarm reaction. In this stage the human body is always ready for doing immediate response towards the stressor. Sympathetic nervous system gets excited and man is ready for fighting with the challenges and threatens of stressor. There are two sub stages of this stage. Shock stage and counter shock phase. In the shock stage, on the time of facing obstacles, a man feels physical shock. Which causes physical temperature or blood pressure low, heart beats are low and muscles are inactive? After this stage counter phase is started, in which body increased his protective nature and all kinds of emergency responses as -swiftness come in heart beats, blood pressure and nervous system. The result if it that the resistance capability of fighting with the stressor is growth, as in the above curve, which is known from the original stressor. It is identified from the picture that in the counter stage phase curve is started to increase upside.

Notes

(*ii*) **Stage of Resistance**—If stressor is presented in front of man, the second stage of GAS is started. Where body stops the effect that arises with the continue presentation of stressor. Some Harmone arises in the body of man in this stage. Which increases the quantity of hormones, means by the medium of these hormones, body after making itself powerful, protects itself from the effect of stressor. In the blood line of body, a special hormone, in which adreno corticotrophin is important, is created by some cells of pituitary gland. The excretion of ACTH which is called another kind of corticotrophin- releasing factor which is arisen by hypothalamus is controlled by it. Consequently CRF are sent into pituitary gland in more quantity, which increases the quantity of ACTH in blood. The effect of stressor can be prevented when the more quantity of ACTH will be presented into blood. In this way the level of resistance is increased. Not only this ACTH excites the cortex of adrenal gland by which cortisol named hormone mingles in the blood of body and the capability of fighting with the effect of stressor is increased, but the maximum level of this hormone is harmful for the body.

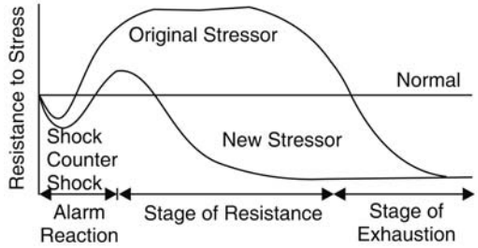


Fig. 26.1 General Adaptation Syndrome

If new stressor comes in front of man in this stage, the resistance power of man towards the stressor is reduced. As that in the picture, it has been shown by the curve.

(*iii*) **Stage of Exhaustion**—The third stage of GAS is the stage of exhaustion. In which there is enough reduction in the capability of responses toward new stressors and original stressors. And stability increased in the creature. And he becomes inactive. And falls ill. It is also seen that the level of stressor- induced hormones. There is possibility of stomach ulcer, asthma, high blood pressure and cancer etc. and diabetes because of stress. And there are more possibilities of the death of man.

It is identified that a man does not only psychological but physiological reactions toward the stressors because stress that caused by stressors is harmful for health. So it is essential to highlight its causes and the strategy for coping with them.

9.3 Factors Influencing Reactions to Stress

As we know man does not only do one reaction but different reactions towards the stress. In other words, there is individual differences in the reactions that are done towards the stress. Psychologists have tried to understand the causes of this individual difference. According to their consideration following factors are such as by which reactions are influenced.

1. Prior Experience—When man feels the prior experience of facing stressful events, generally it has been seen their reactions which have been done towards the stress are serious. For example- if the posting of any officer is in a terrorist village, he will react less stressful in comparision of that police officer, who is sent in that village for the first time.

2. Social Support—The man who gets more social support from his family, friends and neighbors his reaction towards the stress is less serious. Which type of shortcoming comes in the seriousness of these reactions it is not clear but Heller, Swindle and Dusenbury, 1986 have claimed when a man talks to other about his stress and gets their advices, and he gets the true words of their help, the seriousness of the reactions that is done towards the stress is reduced.

The man, who gets social support sufficiently, the reaction he does towards the stress or negative problems of life, as- anxiety, depression and health problems are reduced in them. As- dew, Ragni and Nimorwicz have found in their study that the quantity of stress, anxiety, depression and hopelessness is found less in the man who is affected by AIDS in that situation, when he got the social support sufficiently.

Notes

In the same way Kendall-Tackett, 1993 found in his study that the children who were sexually weak, when they got the support of their mother in that situation their reactions towards the stress were not much seriously. This aspect of social support when a man is in stress he shares his feelings to other and becomes unburdened. the practical study of it has been done deeply. Penne baker and Bell has signified this factor in their famous study. This study had been done on the colleges; there were two groups of students. A group of students has to describe the traumatic events of each day continue for four nights in written within 15 minutes. There is another group of students for comparison; they had to write about unimportant subjects given by user. It was seen when the students were writing about the death of his family member specially the traumatic events of life, the tendency of sadness and depression was found swiftly in them, and their blood pressure was high. It was found after six months that the students who had told their negative feelings with other, they were not only feeling less stress but also their reactions towards the stress were not very serious.

3. Predictability and Control—Man's reaction towards the stress is also affected by the capability of predictability and controlling of stress. If the situation is such about which prediction can be done previously, the seriousness of reaction, which is done towards the stress, is less. In the same way when a man finds that he can control over the situation, the seriousness of the reaction, which is done towards the stress, is less. Epstein and Roupenian, 1970 have done a study in which three users took part. Three groups had to count the frequency of the sound specially that produced from there. After completing the counting of ten times, one group of users had given electric shock at 95% times. 50% times to the second and at the 5% to the third group. It is identified that the predictability of the third group of the electric shock was least because there was less uncertainty in it. While there was the most predictability of electric shock in the first group. it has been seen in the result that although electric shock has been given in the least quantity to the third group, there was more sympathetic autonomic arousal because of present uncertainty means the nature of the reactions that are done towards the stress were more serious. Abbott, Schoen and Badia, 1986 have identified it after analyzing it deeply. If stress is presented for a long time, predictable stress is proved more stressful in comparison of un predictable tension.

4. Cognitive Factors—One reason of individual difference in the reactions that is done towards the stress that how does a man think about the stressful situation or event. The follower of this factor is Lazarus. Some people explain such events or stimulus in a stressful way, by which the reaction, done towards it becomes more serious. On the other side, some explain such events by giving them less importance, by which the reaction that is doe it becomes less serious. Roth and Cohen, 1986 have recognized the two types of styles for collecting the information towards the stressors- sensitizers and repressors. Sensitizers are those men who get the information after being activate and think about the stressful events. Stressors are those men who never think about the stressful events and keep away themselves from the information of stressful events. Stressor resolves the stress in a effective way. Miller and Morgon, 1983 have told in their study when the proper information is collected about the stressors, repressive style is not harmful in that situation but in this situation sensitizer style does not prove beneficial. As they have found in their study the patient, whose surgery was done by the doctors and who were sensitizers, when they were informed about the surgery, they did not feel stress but repressors feel the stress in less quantity when they were informed such information in less quantity.

5. Type 'A' Personality—There is difference in the reaction that done towards the stress by type 'A' personality. There are some special qualities of type a personality, by which the reaction that is done towards the stress are determined. Friedman and Rosenman, 1574, Diamond Matthews have told some important qualities of type a personality:

(*i*) Show up more driving and highly ambitious in the field of competition, work and play.

(*ii*) Doing any works rapidly, give importance to time –urgency, often show up the nature of doing any two actions at a time rapidly.

(*iii*) Give less importance to workaholic and rest.

Notes

(*iv*) Speak loudly.

(*v*) Impulsivity and hostile and doing aggressive behavior towards other.

In which these characteristics are not presented , they are called type 'B' personality. It has been found after the researches that there is more possibility of coronary heart disease in the men of type 'A' personality. It is fact that type 'A' personality is internally added with the two risk factors- high blood pressure and high level of cholesterol. According to one theory that type 'A' man reacts more physiologically towards the stress in comparison of others. Haynes and his follower, 1980 and Mathews, 1982 have confirmed this fact in their studies that type 'A' man reacts towards the stress by showing high blood pressure. In the same way Williams etc have found in their studies when type a man react towards the stress, more quantity of epinephrine and norepinephrien are found in its body and there is more flow of blood in the Skelton muscles comparatively. These changes are directly related to cholesterol plaque[1], which make the possibility of CHD strong by arousing strictness in the artery of heart.

It has been identified, that there are many causes of different reactions that a man does towards the stress.

9.4 Measurement of Stress

Scientist have done successful effort for the measurement of stress, and they have described four important methods for this—

1. Self-Report Method—In this method a man says about self emotional trouble, and the changes which is happening in his life and about the severity if stress. On the basis of the indices which he has told, his stress is scaled. Social readjustment rating scale delivered by Holmes and Rahe, Hassle scale delivered by schedule of recent experiences and Kanner and all his companion, exercises are used under the self report method.

2. Behavioral Methods—In this method, stress is scaled on the basis of completed work, which is done in this situation. If in this situation, rapidly falls come in the accomplishment of work, it is considered that the severity of stress is more for the man.

3. Physiological Indices Methods—In this method, stress is scaled on the basis of the chemical changes as-on the basis of the changes that happen when catecholamine and hydroxycorticosteriods is found in urinary level and blood level.

Each of these methods has some defects, in case of those defects; these methods should be used carefully. It is necessary to describe such defects here.

(*i*) The first method, which depends on the self report, can be completely believed, because man always tries to present himself in proper way and in this effort he does not present the correct picture of stress.

(*ii*) Behavioral method is considered defective because the explanation if accomplishing work can be done by different methods, as- it can be found that lack of motivation, cognitive strain and tiredness can be the cause of loss of accomplishment in place of tension.

(*iii*) It is necessary for scaling the tension on the basis of physiological indices that some equipment, related to that should be bought and doing this in itself will be stressful.

(*iv*) It is not credible to scale the stress on the basis of chemical changes, because such changes can be possible by other causes, as catecholamine secretion in body not only by stress but also in other situations. Hence such growth in body cannot be considered because of stress.

It is explained that there are different methods for the measurement of stress but every method has some limitation, yet it can be used according to the situation. According to Baum1982 it is necessary for the correct measurement of stress that all these methods should be used together by which the result got by it may be credible.

Notes

9.5 Sources or Causes of Stress

How does stress arouse in the mind of man, psychologists have done deeply study of it. And a schedule of many factors has been prepared by which tension arouse in man, such factors are following-

1. Stressful events of life
2. Conflicts of motives
3. Daily hassles
4. Stress produced by work
5. Environmental sources

1. Stressful Events of Life—Different types of events happen in the life of man. Some are pleasant and some are painfully. The important need of these events that man may readjustment with them. It has been identified by the study of psychologists that when a man does not adjust with such events properly, they arouse stress. And physiological and emotional disorder are aroused in man, in this way the study of Holmes and Rahe is important. They have developed a special scale for the measurement of important events of life means they have developed the method of magnitude production, which has been called social readjustment rating scale or SRRS. Different types of events as- the death of husband, wife, divorce, material separation, marriage, illness of the member of family, leave, death of best friend, entrance of new member in family, pregnancy, lost of the member of family, fight with the husband's relatives, change in the habit if food, minor violation of law are included in this scale. The most stressful has been ranked with the least stress. Life changing value of these events have been decided from 1 to 100. It has been found from the life changing value how much readjustment is needed for a man on account of happing such events, as – death of husband and wife has been told the most stressful events of life, which changing value is 100. In the same the unit value of retirement has been called 45 in the last rank means minor violation of law has been put in 43 rank. which unit value is 1. A man is asked to put tick on those statements among the 43 statements for knowing a special period as- how much stress does he feel in the last one or two years, which is found correct for him during the said period, then the unit value related to statement is added, which is called total stress score. As much as there is total, so the stress is considered in man. Generally when the total of man is 250 or more come on this scale on the basis of the events that happen within one year, his life is considered stressful. And there is more possibility of his falling ill within a year. Generally man of getting total score 150 or less than it is considered general, and the man of obtaining total between 150 to 199 is considered as a moderate stress and the man who has obtained the total more than 300,he is considered full of mental stress . Holmes and Masuda have shown it by doing study, the man whose life changing unit value is more than 300 he fell ill seriously within the next nine months, in the comparison of those men whose total score was 200 or under it. It has been found out from these studies how much stressful events happen in the life of man, the more quantity of stress is found in them. And their health is affected by it badly. Although the events- changes of life have been called an important cause of stress, following some facts are such, which has doubts on the called relation.

(*i*) It is difficult to separate the effect that arouse from the stress on some health as- the habit of having special food, habit of smoking, habit of taking alcohol. Man can adjust with the changes that happened in his life that he starts taking more alcohol, or starts smoking cigarette. In such situation, illness that aroused in his body or because of emotional or physiological stages, his health habit will be worse and the important events of life will be reduced.

(*ii*) If the changing event is the cause of stress, any events can arouse stress in the mind of men. But this is not fact. It has been seen that some events arouse more stress in the mind of men, but the same events do not arouse stress in the mind of other people. It is also seen that the normal event arouse psychological and physiological decay in some men, but sometimes more stressful events do not arouse psychological physiological decay in men. Such individual differences indicate that it is not logical to consider special event the cause of stress.

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(*iii*) There are some parts of life scale events, which are considered not as a result but as a cause, as-maternal or economical complication arouse because of decay of emotional or physiological health, which causes stress.

(*iv*) It is an important hypothesis of life event scale that change is stressful in itself. But it was identified by the researches that done later that positive changes are not related to health, sometimes it happens that there is stress in men because of not happening changes in life. It is known that no event makes life stressful, it is mostly depended on the personal history and current life situation.

(*v*) After these situations, the changes that happen in life are also the important causes of stress.

2. Conflicts of Motives—When there is conflict between motives, it creates stress in man. In this situation when motive is not satisfied, it create frustration in man, which is the important sources of stress. As-one student, who cannot obtained best marks in the group, he can gain fame by playing game in the field and remove mental conflict from his mind, but there is stress in his mind by thinking that he could not perform well in the field of education. There are some mental conflicts in the life of man, which arouse stress in which support vs competition, independence vs dependence, intimacy vs isolation and impulse expression vs moral standard.

Notes Success and competition is given more importance in our society, but along with the attitude of co-operation is also considered important. As a result there is mental conflict and stress arouses.

In the same way the desire of living with others and desire of sharing in the weal and woe with others also connected with it. If we do so, we will be given up by our family member and we will be alone. This situation also arouse stress in man in the same way sometimes man is depended on other, but along with he thinks that being adolescence, he should not depend on others it is not good things, this situation also arouse stress in him. some fields as- sex and aggression are such , in which the desire of man moral are faced with normal standards, if man does not accept it, guilt feelings are aroused in him, which becomes the sources of stress.

It is cleared that trial of compromising among the opposites motives also arouse the stress in man.

Kurt Lewin has described the conflict as two opposite inclination- approach and avoidance. When it necessary for a man to select one between two desirable alternatives, it is called approach-approach conflict. Avoidance-avoidance conflict, man is forced to select one between two undesirable alternatives. The third types of conflict is called approach-avoidance conflict, in which a man has to face both types of motives as desirable and undesirable in one choice. It is known from the study that approach- avoidance conflict is the strongest sources of stress among thrice of them.

3. Daily Hassles—The big event of life is the sources of stress definitely, but it is also found that daily hassles arouse stress. Such hassles are found in the life of man all the times, so their importance in arousing stress is not less. This fact is confirmed by the study of Lazarus and their companion and kanner and his followers. Daily hassles that is found in the man all the times, it can be divided into six parts, which are following:

(***i***) **Environmental Hassles—**In which noise, sounds, culprits and useless talking with the neighbours are kept.

(***ii***) **Household Hassles—**In which cooking food, washing the utensils, sweeping the house buying clothes and other things related factors are kept.

(***iii***) **Inner Concern Hassles—**In which the feeling of loneliness, the feeling of fighting with others, the factors are kept.

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(*iv*) **Hassles Due to Time**—In which the feeling of completing all works within given time, and the factors of performing many responsibilities at a time are kept .

(*v*) **Hassles Arising Due to Financial Responsibility**—In which saving, earning related factors and financial responsibility are included, which's burden should not put on them according to law.

(*vi*) **Work Hassles**—unsatisfied from job, not having the opportunity of progress in job and the possibility of firing from job all the factors are put in it.

Lazarus and his companions and Kanner and his companions have developed a hassles scale for the measurement of hassles. Man says about those events on this scale, by which he is put in the hassles for last months. Positive correlation was found between the mental traits and obtained total that was shown by man. Hence it is evident that stress is aroused in man due to daily hassles and physiological and psychological illness arises in it.

4. Stress Produced by Work—Which work is done by man. There are some factors related to it, which produce stress in him. As – if one employ is asked to all lot of work at a time, it is naturally that stress will be produced in him. The feeling of burden will be developed in him. Not only this if employ feels that the physical environment of doing work is not proper, means there is no good arrangement of air, light and sound and controlling in it, he will feel job dissatisfaction. Which produce stress in him? In it role-conflict and performance appraisal are important. In the condition of role-conflict, different hopes are developed by different groups of employ from any executive or manager, which is not possible for management to complete it, consequently stress produce in them. For example take the job of kulpati of university, employ demands him for good service condition, teachers force him for maintaining good environment, student demands with him for good education and government force him for doing his work recognizing his resources. Thus it is not possible for him to complete this types of opposite hopes., which produce role-conflict which produce stress in him. In the same way if the way of performing appraisal of employ of such, which is considered by employ proper, it does not create stress in them, but if they consider it that this way is not proper, it will create tension in them.

When there is more stress on work, and men do get rid of it, a special stage produce in them , which is called Burnout. in which employ look quite hopeless, unsatisfied, incapable for work and psychologically weak. In the last stage of Burnout, man is incapable in doing work. according to Rice- Burnout work is not the trait of work it is the result of unmanaged work stress.

5. Environmental Sources—Environment is also the cause of producing stress. Some environmental factors are such, which are natural and produce stress in men, as- earthquake, storm and swift air etc are some factors, which create stress in men according to Kasl, 1990. Such environmental factors can be studied at that time, when it is found in great quantity. Such natural event arise stress in men. Except these natural factors there are some environmental factors, which are made by men, and produce stress in men. As- noise pollution, situation produce by nuclear test is the example of such factors, by which stress creates in man. Balm and his companions (1983) found in their study, the men who live far from the place, where nuclear is tested, are affected more or stress arises in them more than the men, who live near by it. In the same way Cohen and his companions (1986) have done a study, which motive was to study the effect, which put on the stress of noise. In this experiment the students of school near by busy aero dram are compared with the students of school, which school is suited on a solitary and peaceful place. As a result it was seen that there was more stress in the first school's student than second school, which is known by their high blood pressure and by the bad performance on standardized tests.

In the last it can be said that stress arises in man due to many reasons, if we think about the strategy of coping it, we will keep these factors in mind.

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9.6 Strategies of Coping Stress

Whatever may be the causes for stress, but it lays bad effect on the emotional and physiological health of man. Hence psychologists have thought seriously on the strategies of coping it. Reducing the related behavior of stress is called coping behavior. Coping behavior has been defined by the psychologists in different ways, as – **Goodstein and Lanyon** (1975) have defined the coping behavior in this way—

"By coping we mean the degree to which individuals are able to meet and master at least three kinds of challenges to their existence: (1) direct challenges from the physical environment (2) challenges stemming from their physical limitation (3) interpersonal challenges." **Lazarus and Launier**[2] (1978) have defined this behavior in this way- "Coping consists of efforts, both action-oriented and intrapsyhic, to manage, (that is master, tolerate, reduce, minimize) environmental and internal demands and conflicts among them." According to Wood & Wood – "Coping refers to person efforts through action and thought to deal with demands perceived as taxing or overwhelming."

After analyzing the above definition, many characteristics of coping behavior are highlighted, which are following—

(*i*) Coping behavior is not an active behavior of any time, which is done between the demands of man and environment, but there is an internal process, that moves continuously between its sources, values and demand till a special time. Hence it is process and strategy.

(*ii*) Coping behavior includes many types of actions and reactions, done towards the stressful stimulus and situations.

(*iii*) In this way, in the coping behavior, a man arranges three types of factors as- demand of environment, physical limitation and internal individual challenges with his sources and values in this way that they could not affect man more.

(*iv*) Coping behavior is effortful. It does not happen itself.

(*v*) Coping behavior is a learnt behavior.

According to Lazarus and Folkman, 1984- all these strategies can be divided into two part—

1. Problem–Focused Coping Strategies—In this type of strategies, man evaluates the stressful situation and problem. And does some strategies, in which he could gain success by changing it or by removing it. man uses such strategies when he sees that problem, which is producing stress, is not very serious or he could change the nature of this problem, in this strategy, problem which is producing stress, after making it clear man defines it, then he searches it alternative solution, and evaluates them in the form of coming lose and benefit of all those solutions. And selecting correct alternative gives it work form. How much does a man give work to these series strategies properly, it is depended on his past experiences, intellectual capability and the capability of self control. In this way a man tries to make the stress less by changing the nature of experience. Here specially following strategies have been successful.

Task Do you think that social favor helps in reducing stress? Present your thoughts in favor and against.

(*i*) Confrontational Coping—In these types of coping strategies, a man faces the problem by standing in front of problem. And tries to resolve it. As, any officer is angry with his under officer and he threatens him for firing, he will know the cause of his firing by standing in front of his officer. What is his defect? Will he try to take his officer in believe so that he could change his thought? Holhan and Moos, (1987) on the basis of their study, they said

that the method of confrontation proves more useful than the method of avoidance. The man who tries to resolve the problem, they not only resolve the problem properly but also develop the capability of facing the problem emotionally with the stressful situation in the coming time. It has been explained from the researches done by Felton (1984) the men who use avoidance method more for facing the stressful situation, there is more possibility of arising stress in them and along with health problem also produce in them, but avoidance is not a bad method in the form of behavior coping. When man faces less stress, he could resolve it by adapting avoidance method. In this method, man makes himself separate from that stressful situation.

(*ii*) Social Support—How does a man face with the stressful situation, it is not only depended on the internal sources but also external sources means it is depended on his social support. Cobb (1976) has said defining the situation of social support that it means by that special information, in which man is liked by other men, respected by other, given importance by other and cared him by other. When any man feels the social support of other men, he faces to stressful situation properly and his health relative can be as his uncle, aunt, maternal uncle or maternal aunt and any club organization or political party.

It has been explained from the researches of House, 1981, Schafer and their companions that the different version of social support can be divided into three categories- tangible assistance, information and emotional support. In the tangible assistance, tangible things are given to man as money, , food or other related things so that he may face the stress , in the information method, some thoughts are provided to man by other men by which he could face the stressful situation easily. Emotional support, that is the most important source of facing stressful situation in the form of social support. In this family, friends or neighbor behave in this manner as they are with him for facing the problem.

It has been cleared by the study of Cohen and Wills, 1985 that social support helps in reducing pain which is produced by the stressful situation. Kulik (1989) has said this on the basis of his study, there is less possibility of having any disease with the social support. And man recovers soon from any disease. And there is no possibility of dying with the dangerous disease. Berkman and Syme , 1979 have told 7000 men, who were living in California, for sharing about their social and group relation, in their one study. And they were asked to share about the mortality rate of their family in the last seven years. It is seen in the result that the men who have good social relationship, their mortality rate was less than the men, who have not good social and group relation. It is also found that the men, who meet with others, good habits also develop in them by social circle.

Self Assessment

Fill in the blank:

1. The first group of psychologists understand stress as a ..... .
   (a) Specific Factors (b) Stimulus Factor (c) Psychological Factor
2. The second group of psychologists define stress as a ..... .
   (a) Stimulus (b) Response (c) Reaction
3. Emergency reactions come under reaction of ..... of stress.
   (a) Mental (b) Objective (c) physiological
4. Self-report method is a method of ..... .
   (a) Tension-scale (b) Intelligent –scale (c) Behavior

(*iii*) Plan Full Problem Solving—In this type of coping strategy, man makes a plan for facing with problem that aroused stress in man and he resolves the problem by behaving according to that,

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as- one unemployed man reduce his stress by reading vacancies in the news paper and sending his resume to the employer for coping stress that aroused from the unemployment.

Under problem-focused strategy there are some strategy in which the focus of man does not towards the changing the nature of problem but goes towards him self. In it man tries to bring changes in the level of aspiration. He searches for alternative sources and learns new skill. With the help of these strategies, the stress of man can be coped properly.

2. Emotion-Focus Coping Strategy—In this type of strategy, man focuses on the emotional response aroused by problem. In this strategy man does not try to change the nature of problem but tries to cope the anxiety aroused by problem. These strategies are used where man feels that the problem, that is arising stress, is so much serious, that it cannot be changed and the stress is arising in man in great quantity. Under it two types of strategies are described—

(a) **Behavior Strategy**—In this strategy, stress can be coped by doing different kinds of behavior. as- he focuses on another things by moving away his focus from the problem, the man who starts to take alcohol and cigarette in great quantity, and he does work by making schedule of the works, which is done by him every day. The advantage of it that man does not feel obstacle in such works which can be obstacles in his main traits.

(b) **Cognitive Strategy**—In this strategy, man tries to control stress by changing the meaning of stressful situation. In this way man does here reappraisal to the stressful situation. This reappraisal is real. Where a man finds this conclusion after thinking seriously that in fact the problem was not so much serious. Meichambaunm has called this problem cognitive restructuring. But sometimes we make reality distort by doing so, and deceive ourselves in a different way. Such cognitive strategy is called by Freud a defense mechanism, in which seven if following-

(1) **Repression**—In which anxiety, memory etc, which is aroused from the stressful problem, goes into unconscious mind from conscious mind, because they are mentally painful. It is called repression process, which is different from suppression where a man knowingly keeps away the memory and desires that aroused anxiety from the conscious mind, so that he could focus on other factor. Man does not know his desires and memories in repression, while in suppression, man knows that which desires and memories are kept away from him.

(2) **Reaction Formation**—In which man tries to control stress by developing quite opposite desires and thoughts from the desires and thoughts that aroused stress in man, as- a leader worried with corruption copes his stress by giving speech against corruption.

(3) **Rationalization**—In which a man moves away from his stress and satisfy himself by changing his irrational behavior or thoughts into rational behavior. In this way rationalization completes two motives of man. First when he enables to achieve goal, rationalization copes the seriousness of stress, produced from frustration and it provides acceptable motive for the behavior that is done by man. As- one student can make this rationalization not reaching in the examination hall at the correct time that his room-mate did not awake him at the proper time. here student tries to remove the stress of not reaching examination hall by the medium of rationalization behavior. it is possible that his friend did not awake him at the proper time but reaching the examination hall at correct time is his responsibility not his friend.

(4) **Projection**—In these types of defense mechanism, man blames on others for his mistakes and failures for removing his stress and in this way he makes himself free from the faults, which create peace and satisfaction in him. Really projection is like rationalization, but its importance is different, because it is mostly used in our society. After getting failure in the examination, student tries to cope his stress by saying this that teacher did not teach him properly or his he was kept busy during the period of examination, by thinking in this way he did not find himself guilty and his stress is reduced.

(5) **Displacement**—Displacement is also an important cognitive defense mechanism by which a man can reduce his stress, in which stress aroused by painful motives and conflict is displacement by

fundamental things, which produce painful motives and conflicts is reduces by the displacement towards unrelated things or situation. As- the boy , who is beaten by his parents copes his stress by beating his younger brother, it is the example of displacement it is identified in the displacement man copes his stress by doing react towards that things and man, which is seen him less dangerous and less fearful.

(6) **Denial**—When external reality is more painful and dangerous that man cannot tolerate it, he removes tension by denying the existence of that reality, as- the parent of the child, who is seriously ill, reduce his stress by thinking that his child is out of danger, while they know the outcome of the illness.

(7) **Intellectualization**—Intellectualization is such a defensive mechanism, in which man develops detachment by thinking in an abstract way about the stressful situation, by which he reduces his tension. As- a doctor who always fights with the life of patient, seeing their situation stress is produced in them, but not showing emotionally enrolment towards them the develop a different kinds of detachment, by which their stress is reduced and they get success in the treatment of patients.

It was identified that many strategies had been described for coping the seriousness of stress, yet all these strategy do not get success in its motives because the seriousness of stress has affected badly most of the men of the society, that their emotional and physiological health is affecting badly day by day. Hence psychologists have taken all this in a challenging way.

It has been known from the new researches that there are temporal aspects of coping behavior. Man can cope stress after arising it.Beehr and Mc Grath, 1996 have described such five situations, which create special temporal context, in which man does coping behavior—

(a) **Preventing Coping**—This is such a coping behavior, which is started very early by men from the event of arising stress, as- smoker gives up smoking by the thought of keeping away from the danger of lungs cancer, it is accepted as the example of preventive coping.

(b) **Anticipatory Coping**—When man does coping behavior that stressful event is happening at once, such coping behavior is called anticipatory coping. If man takes tranquilizer at once with the guess, that surgery is done by doctor at once, this coping behavior is called anticipatory coping.

(c) **Dynamic Coping**—This type of behavior is done by man when he is going through stressful situation. As – when a man pays his attention on other thing for the thought of coping his pain, it is called dynamic coping.

(d) **Reactive Coping**—Man accepts this type behavior after the event, which aroused stress, as a man adjusts with his life by bringing some changes in life style after losing his one foot. Then it will be called reactive coping.

(e) **Residual Coping**—This is such a coping behavior which is used by man to face the deep effect of stress of event which has produced long time ago, as after a long time of happening traumatic event, a man can adjust with the event by controlling his fearful rumination about that event.

It has been cleared that there are different aspects of coping behavior, which are very useful. Now It is known by new study that men and women show different behavior from one another in the selection of coping strategies. It has been identified by the studies that problem focused coping strategies is mostly used by men, while emotion focus strategy used by women, in which it is tried to get the social aid by other people. It has been cleared by the studies of Ptacek, Smith and Dodge (1994) that the main reason of it from the starting of life men and women are taught to follow the different way to face the stress, but this conclusion comes under doubt by the study of Porter and Stone (1995), because it is found in their study that the thoughts felt by men and women are less different from each other , or which strategies they follow to face the stress, are less different among themselves. There is difference in both of them in the thought of content. Work related stress is more told by men. And self related problems as parent related problem and problems which are related to the internal action with other people are always told by women,

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it is also find out by the study that coping strategy is also affected by culture. Chang, 1996 did an experiment in which specially thought on this fact that is there any differences in the thoughts of optimist and pessimist and coping strategies between Asian and European students, Or not. It is seen in the result that Asian students were most optimists comparatively and they used more coping strategies of problem avoidance and social withdrawal.

9.7 Management of Stress

As we know that a man uses different kinds of strategies for removing the stress that happens in life, but such strategies do not prove useful forever. The most important cause among them is the seriousness of stress or its newness. Health psychologists have paid attention on some methods for facing such situation. It will be appropriate to ask here before thinking on those methods. What is stress management? Stress management means by such programs, in which man is asked about the sources of stress and education is given him about the scientific and modern way of facing it. Not only is this practice of the skill, for reducing stress also done here.

There are many ways of managing stress management, in which main three stages are important—

(1) In the first stage, man learns that what is stress?

(2) In the second stage he learns the method of removing or reducing stress, practice is also done by him in this work.

(3) In the last stage, he practices of the management methods in the targeted stressful situations and monitor the effect of it.

An important program based on these three stages is developed in America, which is called 'Combat Stress Now', which is successfully used in those schools where students feel complication in facing with the stress of educated life.

According to Lehrer and Wollfolk,1993 many techniques of management have been divided into two parts:

(a) Individual Approach

(b) Environmental Change Approach

The techniques that come under both of these approach are following described—

(a) Individual Approach—Under it special work is done on mainly men for the management stress, under it two techniques are put-

(*i*) Arousal Reduction—In this method , man is trained to the relaxation of muscles. And sometimes the support of biofeedback is also taken. It is seen that after getting the training of this man (1988) began to use this talent slowly in his real life for reducing the stress. Davidson and Thomson have said, after doing the study of this that man can get the stable advantage of this training, when he does continue practice of this type of relaxation.

(*ii*) Cognitive Restructuring—The founders of this method are Meichambaunm, 1977; Ellis,1962 and Beck. This is such a techniques in which it is tried to change the belief system of man so that he may present the right and appropriate detail of experiences of life and can bring changes in his clear behavior and emotion, Because of such belief, man has many expectations with others and even himself, and becomes stressful. By the cognitive restructuring techniques, he enables to put away such belief from himself and put another in place of that. Folkman and Lazarus (1984) have accepted this fact in his study.

(*iii*) Behavioral Skill Training—This is such a method of stress management, man is trained with some such skill, related to behavior, by using that he can reduce his stress. As- time management is such a skill, by learning this, man can reduce his day to day stress. Often it is seen that man

has to do more work in limited time, which is a cause of stress, in the time management, man is trained how he can deal with such situations. it is evident that some special behavioral skills are taught to man, by which he could control day to day stress.

(*iv*) **Biofeedback**—In the decade 1970, a new technique became popular, which is called biofeedback. Biofeedback is such a specific technique, by which the physiological aspects of stress can be controlled and monitored. In which feedback is given about the function of any special internal part of man. Which is generally out of conscious control of man, man has to control it by recognizing it, as the connection of disease can be established with such a machine, which can change the hearts beat into tone, so that man could understand this how much rapidly heart is beating. In the process of trial and error, man learns to control over this autonomic response slowly. Now man can feel it that not paying attention on the heart beats, if the attention is focused on other things, by this his heart beats can be easily reduced.

Biofeedback is not only used for reducing stress, but also for the prevention of high blood pressure, long pain and muscles-contraction headache. But these techniques did not become popular because of high cost. The another cause of its unpopularity is that better result began to come with other techniques.

(*v*) **Relaxation Techniques**—There are many relaxation techniques, which are used for reducing stress by man when man is in the stage of relaxation, there is less arousal in the body of man. Which means man does not want to react towards the stress. In this way man takes his body into the pleasant stage from the lower stage. There are many relaxation methods, which is used by man for reducing stress. In which important are following—

(1) According to Everly (1989)—one aspect of relaxation technique is that in which there is projective relaxation of different muscles of body. Here imagination is this, because tension and anxiety is related to the muscles stress so the feeling of stress and anxiety can be coped by reducing the stress of muscles. In the projective relaxation, man putting some muscles of body in sequence, specially first man relax the muscles of face by starting from lower parts of muscles. Until body comes in the stage of complete relaxation, the feeling of arousing peace is practiced in man, then he developed less stressful tendency.

(2) The second version of relaxation technique is controlled breathing. Because the stage of relaxation is related to controlled breathing, so we can develop relaxation in man by arousing this type of breathing pattern, first man takes a long breathe, by which fresh air goes in the lungs of man. After taking long breathe within 10 minutes, man takes short breathe, stress arousing pain is controlled after adapting this process. This fact is confirmed by the studies of Turk and his colleagues and Weisenberg, 1977.

This fact has supported by some studies, which by putting relaxation techniques in continue practice it helps a lot in developing immune system. Kiecolt- Glaser and his colleagues (1984) studied in which some medical students of first year were divided in two groups, relaxation group and comparison group. The students of relaxation group were trained in relaxation session before 5 to 10 months before the starting the examination, training was not given to comparison group. During the time of examination defects were seen in the work of immune system of both of the groups, means the ratio of t cells were less, but stress was felt less by the students of relaxation group in this group the member, who practice more in the relaxation session, t cells were found in them more than the student, who did not practice in the relaxation session. It is identified from this study that relaxation reduces anxiety and stress. Kiecolt- Glaser, 1985 did other experiment in which 45 old men were divided into three groups, relaxation training is given to one group, social contact is provided to second group and third group was kept under control group. Training was given three times to first two groups in a weak till one month. It was seen after finishing month, there was enough improvement in the works of immune system of relaxation group, which tells himself that the clear effect of it seen by doing continue practice of it.

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(b) Environmental Changes Approach—In the individual approach, those techniques are forced, which prepares a man for doing compromise with the special environment, but in the environmental approach, accepting environment as a problem it is tried to reduce stress by doing some changes in it. The role of social support is considered important in it. Cohen and Wills (1985) have called two types of changes- Structure social support and functional social support. Structure social support means by the network, which is related to the social support, as- numbers of friends on the occasion of marriage. Functional social support means, by the qualities of men, as – does a man has this faith that he can call his relative in the bad time. If yes, it will be considered that man has got functional social support. It has been cleared by the study of Goodnow and Grady (1990) and Seeman and Seeme (1990) that tension is creates by low social support and many physical and mental diseases are produced by it. In this approach, man is trained in this way by which can make his social circle strong and changes the environment of his surrounds in which stress is not presented. In this field the contribution done by community psychologists is admirable.

It can be concluded that there are many techniques of stress management, a man can spend stress less life by using these methods properly.

9.8 Summary

- Stress is a big problem of our society. It is known from modern researches that stress is the cause of the illness of 75% people.
- Some psychologists have tried to understand the stress, as the factors of stimulus and have said that any event or situation that insists a man for doing abnormal responses is called stress. Events as- earthquake, leaving the job, destroy the business, death of loving person are the main events, which create stress in a man. Such materials, social and environmental factors, which create stress, are called stressor.
- Some psychologists have tried to explain the stress as a response.
- The third batch of psychologists, who defined stress not only as a stimulus not as a response but also tried to define it on the basis of its relationship. This approach is called transactional approach. Psychologists consider it that some events or situation are definitely such, which are stressful for men. There are some situations and events which can create stress in some men, hence stress can not be defined meaningfully as a stimulus in the same way the responses of stressful events, even that physiological responses can be affected easily
- When a man is under stress, he feels it and does response toward it.
- Psychological Reactions-there are many kinds of physiological and psychological reactions in stress. In other words, disruption is found in the physiological works of man in stress.
- A man does physiological reactions towards the situation or stimulus causing stress. Often it is seen that after surrounded by the stressful situation, the stomach of man is disturbed and heart beats become abnormal and changes in nerves system. All these are the example of physiological reactions.
- As we know man does not only do one reaction but different reactions towards the stress. In other words, there is individual differences in the reactions that are done towards the stress. Psychologists have tried to understand the causes of this individual difference. According to their consideration following factors are such as by which reactions are influenced— (1) Prior Experience (2) Social Support (3) Predictability and Control (4) Cognitive Factors (5) Type 'A' Personality.
- Scientist have done successful effort for the measurement of stress, and they have described four important methods for this— (1) Self-Report Method (2) Behavioral Methods (3) Physiological Methods.

Notes

- How does stress arouse in the mind of man, psychologists have done deep study of it. And a schedule of many factors has been prepared by which tension arouse in man, such factors are following— (1) Stressful Events of Life (2) Conflicts of Motives (3) Daily Hassles (4) Work Related Sources (5) Environmental Sources
- Whatever may be the causes for stress, but it lays bad effect on the emotional and physiological health of man. Hence psychologists have thought seriously on the strategies of coping it. Reducing the related behavior of stress is called coping behavior. Coping behavior has been defined by the psychologists in different ways, as- Goodstein and Lanyon have defined the coping behavior in this way—

  "By coping we mean the degree to which individuals are able to meet and master at least three kinds of challenges to their existence: (1) direct challenges from the physical environment (2) challenges stemming from their physical limitation (3) interpersonal challenges."
- The most important cause among them is the seriousness of stress or its newness. Health psychologists have paid attention on some methods for facing such situation. It will be appropriate to ask here before thinking on those methods. What is stress management? Stress management means by such programs, in which man is asked about the sources of stress and education is given him about the scientific and modern way of facing it. Not only is this practice of the skill, for reducing stress also done here.

9.9 Keywords

1. **Physiological Reaction**—Bodily reaction
2. **Rationalization**—Try to understand work and sources by the medium of logic

9.10 Review Questions

1. Explain the characteristics of tress and tension.
2. How many types do reactions have? Explain in detail.
3. Analyze the factors that happened under stress.
4. Explain the methods of measurement of stress.
5. Explain the strategy of coping stress and its management in detail.

Answers: Self-Assessment

1. (b) 2. (b) 3. (c) 4. (a)

9.11 Further Readings

Books

1. Psychology – The Study of Human Behavior—*Brijkumar Mishra, P.H.I, Learning New Delhi.*
2. Education Psychology—*S.K. Mangal, P.H.I Learning, Pvt, New Delhi.*
3. The Development of Learner and Teaching Learning Process—*A.K.Verma, Hindi book Center, New Delhi.*
4. Psychology—*Dr. Saryu Prasad, Agra, Book Store, Agra.*

Notes

Unit-10: Anxiety

CONTENTS

Objectives

Introduction

10.1 Anxiety: Meaning and Definition

10.2 Nature of Anxiety

10.3 Kinds of Anxiety

10.4 Principles of Anxiety

10.5 Causes of Anxiety

10.6 Characteristics of Anxiety

10.7 Summary

10.8 Keywords

10.9 Review Questions

10.10 Further Readings

Objectives

After the study of this unit, the student will be able to—

- Understand the anxiety and nature of Anxiety.
- Understand the principles and kinds of anxiety.
- Understand the causes of anxiety.
- Understand the characteristics of anxiety.

Introduction

It is natural for a man to be fearful. Sometimes he gets worried and fearful with the curse of god and goddess and other times worried with personal and social problems. Freud (1939) considers the conflict between Id, ego and super ego as the important cause of anxiety. This is the fact in itself. But it is the statement of Hargi (1939) that it is developed by the social causes, family disputes, criticism of man by the people of society, uncompleted need of man etc are helped in the development of the nature of anxiety. Hopelessness, discouragement, frustration, depression, mental and physical weakness is seen in worried man. Thus fear and social adjustment is the basis of anxiety.

Notes

10.1 Anxiety: Meaning and Definition

The word 'Duschinta' is the Hindi transformation of English word 'Anxiety', which is made from the word Anxious of Latin language, which means 'Stay of Agitation' in English or it means in Hindi ' the condition of Agitation'. Anxiety has been defined differently by different psychologists.

1. **Freud (1936):** Anxiety is a stoppage in the human development. There is an important role of anxiety in human behavior in the materialistic age of today. It is not clear and invisible in the beginning. As soon as it develops, it nature becomes serious, by which changes are seen in the behavior, activities and daily routine of men.
2. **Solian, (1955)**: Anxiety is the condition of painful mental stage, which is arisen by past personal experiences.
3. **W. Liscar (1956)**: Anxiety is the physical and mental movement.
4. **Lorel (1955)**: Anxiety is the fruit of behavior of parent with children.
5. **Drever (1958)**: Anxiety is the mixing nature of many emotions, in which anger, fear, low self-esteem, jealousy are included.
6. **Colman**: Anxiety means by the worried of liberal and directionless.
7. **Fisher**: Anxiety is the process of that those internal, personal and enter less worthy difficulties in mental seizes.
8. **Roznav Gragti:** The man who is suffered from this disease, restlessness, doubt and liberal directionless worried in him.
9. **R.R. Willard (1965):** Sudden changes in civilization is the most important cause of anxiety.
10. **Kaimran**: There is maximum emotional stress and liberal worried in found in this type of patient.
11. **Mandugal**: Anxiety is produced from fear.
12. **Bugleski**: Anxiety is a starting element in the learning of any work, anxiety is produced as the result of efforts of protecting from the curiosity obstacles, the desire of reward and punishment etc.

Movar (1950) said that modern environment is the cause of arising anxiety, in which alcohol, smoking, addicted tablets, gambling and more sexual tendency etc are found. Movar has said further that today's modern techniques, materials and outfits, cerebration in the cocktail parties and more tendencies in the materialism are helpful in anxiety, as a result, unsocial works are done by man as – murder, suicide and divorce etc.

Movar has written in his book that anxiety was not studied before 1930 in the psychology. The study of anxiety is started in psychology, when Freud and his followers studied anxiety as a human development. Daidald and Miller have said (1950) anxiety is added with the personality of men. Searches have also accepted it.

10.2 Nature of Anxiety

Anxiety has attracted the attention of many psychologists for a long times. In fact anxiety is curse for human life, when it is out of control. When a little bit anxiety is told necessary for the development of man, on the other side, out of control anxiety is the cause of destruction of man. Especially it is dangerous for the teachers, trainers and the students of school.

Albert and **Heber, Meddler** and **Watson, Spans and Spans, Wine** and **Surgeon** and other psychologists have certified the nature of Anxiety. According to them, the nature of Anxiety is following:

1. The nature of work, the evaluation of result and emotionalism is the basis of anxiety. Albert and Lever (1960) have confirmed this fact and said- "anxiety is always depended on the natural evaluation and the nature of emotion for doing work."

Notes

2. Anxiety is arisen due to the hindrance in the work. Anxiety is the emotional explosion to the helpless stage of a man. It is the statement of Meddler and Watson (1966)— when a man does any work, any obstacle is arisen in the limitation of period of work and there is no other alternative of that work , man finds himself in the mental weakness and helpless condition, which is conserved as an anxiety.

3. Mental conflict is the further factor of anxiety. This mental conflict takes the form of anxiety in the coming time. It is the statement of **Amelpe** (1966)— "in spite of having proper mental conditions if obstacles come in the work of man, the condition of mental conflict arises in him, which becomes the cause of anxiety moving further."

4. If work is difficult or in spite of being easy it is out of the reach of man, it is natural for a man that he becomes the victim of anxiety. Spans and Spans (1966) have told that anxiety is always depended on the difficulty and capability of work.

10.3 Kinds of Anxiety

Anxiety can be divided into two parts on the basis of nature of it.

(a) Division on the basis of nature and aspect—

(1) Independence and directionless anxiety or non-abstract anxiety

(2) Abstract Thinking

1. Independence and directionless anxiety or non-abstract anxiety

It is the statement of Freud (1953) that anxiety is a baseless and shapeless mantle thinking, according to it, which anxiety is supported without any reason, that is put under it.

Explaining it Olpe (1969) has said—That liberal directionless anxiety means such types of worried men have lack of concentration, incapability in taking decision, more emotionalism, discouragement and mental stress is found without any reason.

2. Abstract Thinking

According to Colman—The meaning of this type of anxiety, as- internal chaos, unhealthiness, the death of beloved, failure in the examination and the arrival of any man, such worried come under it.

(b) Classification of anxiety on the basis of traits—

Some psychologists have described the division of anxiety, on the basis of traits, which is following-

1. Some men are such, who are hardworking from nature but get worried by many reasons, which causes painful physical and mental traits in them, this condition is found mainly in the old age, which give suffering to some people with the disease of mental defect.

2. There are some people, who are depended on others, less intelligence is found in them and such people fear from the confronting of difficulties of life. These people are self centered and selfish. And

sometimes they are trouble for others. Because of these defects as weakness, selfishness and incapability, the traits of mood defects are developed in these types of men.

3. Freud (1940) has said that some married women are such who are not emotionally developed completely. They adapted the nature of in generosity and intolerance. If she gets married with the strict man, the feeling of loneliness, inferiority and insecurity developed in her. as a result her life is filled with quarrel and they become suffered with the seizes of worried.

10.4 Principles of Anxiety

Many psychologists have delivered the concept, nature and definition of anxiety. on the basis of it, the principles of anxiety has been delivered, which is following—

(1) Freud's principles of anxiety

Freud (1933) has said about the theory of anxiety that there is a great conflict between the ed, ego and super ego, which developed mental stress, that is anxiety. Namely the absence of these three orchestrated by mutual anxiety is born.

(2) Cornhani's principle of anxiety

Cornhani's (1937) has said about the principles of anxiety that anxiety is increased in child because of social effects not by organic factors as Ed, ego and super ego. It is considered that in the starting child fears from his parents and society. Child tries to adjust himself with the society by the quarrelsome atmosphere and hearing the criticism by the family member, which is considered as the theory of trial and error. It is his statement that dual organic factors are not found between Ed, ego and Super ego. But among the needs.

Self Assessment

Who has given the following definition about anxiety:

1. "Anxiety is the condition of painful mental stress, which is aroused by the past experiences of man."
2. "Anxiety is the physical and mental movement of man."
3. "Anxiety means by the liberal directionless worried."
4. "The most important cause of anxiety is the sudden changes in civilization."

10.5 Causes of Anxiety

The anxiety that take birth in teachers and students turns into horrible form. They also have the same reason, which are produced in any men by the explosion of anxiety. It can be many causes of anxiety. But Coalman has described all of those causes including into three causes in his book 'Normal psychology and modern life'—

1. Organic Factors

2. Psychological Factors

3. Social Cultural Factors

1. Organic Factors

Polin (1969) and Cohen (1974) have highlighted this factor for the first time. This factor is related to heredity. Under it the age, sex, emotional stress and more fear of man etc are obtained by heredity. The alive example of that as much as the country will be more prosperous, so the anxiety is found in it. heredity is such a factor among the organic effective factors, which is found in the mental patient from birth.

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2. Psychological Factors

Coalman has describes two factors under this effective factor—

(*i*) Defective learning

When any child does not get proper learning. It is natural to produce the feeling of inadjustment in them. This unadjustment slowly keeps him away from the society. Consequently he becomes the victim of frustration, hopelessness, discouragement and depression. Thus defective learning is also an important factor for anxiety.

(*ii*) Obstacles in the progress of man

When some one does not get proper opportunity for doing progress and growing in personal life, definitely he becomes the victim of mental disease. It is natural for him to be the victim of mental disease as- irritation. Above saying all diseases are the main cause of anxiety. It grow it after producing it.

3. Social Cultural Factors

Famous psychologists kidson and johns (1968) have said on the basis of the study on the West Australian people that the people, who live in more civilized country, more anxiety is found in them. While little anxiety is found, where people are not living in educated manner. It is identified that social cultural factors affects anxiety.

Did u know? Coalman (1976)has said that in the backward countries, intoxicating nerve affected is found more, while anxiety is found in the developed country.

Unhappiness is the main reason of it. Coalman has found out on the basis of different researches that in the absence of culture and well conditioning situation, unsatisfaction is maintained towards the life and this unsatisfaction affects the mental condition of man.

There are some others effective causes of anxiety besides the causes, told by Coalman—

(*i*) Fear

In the starting, Freud (1936) has indicated towards this fact that mental and physical fear is found baseless in the worried man, as – the fear of an accident, fear of firing from the job, or the fear of get failure in the examination, etc.

(*ii*) Long diseases

It is the statement of Coral (1955), when a man is in long disease for a long time, mental seizes take birth in him, as – the feeling of inferiority. As – they think- now we will not get well, people are doing unexpected behavior with us etc.

(*iii*) Deep worry

It has also been concluded on the basis of the researches and study, which has been done on the anxiety. When there is deep anxiety in any man because of some special causes, sometimes after finishing the causes of worry this anxiety is presented in man, for example- after finishing the cause of an accident in the moving train, when he travels in that train again, the fear of reaccident is presented in him.

(*iv*) Family dispute

Family dispute is also another cause of anxiety. Fight between mother and father, father and son, stress between two brothers creates the cause of anxiety.

(*v*) Strict Punishment

Burt (1947) has said that the fear of strict punishment that is found in school and family is also another cause of anxiety in the children. Such children have the tendency of desertion for school in the starting. By and by the tendency of desertion towards other works is also found in them.

(*vi*) Suppression of internal feelings

It can be concluded from the study of Freud that such children, who have introvert personality, anxiety is developed in them because they suppress their feelings, by which frustration and inferiority is developed in them, which is the causes of anxiety.

(*vii*) Unable to get the desirable things

It is the statement of Morgon that the people , who do not success in getting the desirable things, anxiety naturally takes birth in them. This type of anxiety create because of not getting desirable jobs, money and the girl, whom you loves, gets married with other man.

(*viii*) The feeling of criminal tendency

This fact came in front of us as the result of the statement of Morgon that anxiety is produced in man due to developing criminal tendency in man.

Notes After study Morgon has said about a woman that her criminal tendency was so much developed that she wants to eat her child. Such different examples confirm this statement that sin and criminal tendency has given birth to anxiety.

(*ix*) Get failure

Often it is seen that the child, who always gets failure in any work. it is natural for him to get frustration, this frustration take the place of anxiety. When any student gets failure in the examination of class again and again, he is filled with frustration and moving forward this frustration turned into anxiety.

(*x*) Other factors

Ese (1952) has said about the cause of anxiety that more smoking, unable to get expected help from friends, insulted by the family and society, feeling of insecurity, selfish, feeling of inferiority and more doubted mentality etc affected man indirectly and directly and filled him with anxiety.

10.6 Characteristics of Anxiety

Different psychologists have told different characteristics of anxiety, which are following—

(1) Directionless

Freud has said that the man, who is filled with anxiety, he cannot make a definite goal in any works, because anxiety is a characteristics in itself. It is unstable, goalless, and baseless.

(2) Baseless

Freud considers it that anxiety is a baseless fear, means there is no solid basis of anxiety. Sometimes worried man does not know himself that why is he worried? But he is worried.

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(3) Anxiety is Internal

Anxiety is the condition of mental movement, so it is mainly internal. A man can feel it but if he is told to express his desire he cannot do it properly. Besides it thee is one another characteristics of anxiety. That it is completely personal.

(4) Anxiety is aroused without any causes

There is no solid basis of anxiety. It comes itself it is the important characteristics of it. And it is arisen without any reasons. or which are the reasons, they are not quite clear.

(5) Difficulty in taking decision

Anxiety adds with some characteristics as- causeless, baseless, and goalless, so it natural for the man, who is worried, to have arisen the dual mentality. The man, who is filled with anxiety, cannot take decision that what is wrong and what is right, he feels difficulties in taking decisions of dual feeling, in which man is trapped in the pawn of anxiety.

(6) Anxiety is filled with emotion

Anxiety makes a man more emotional means the men who is filled with anxiety cannot feel movement in the changes of physical and mental and social condition, consequently it is considered the characteristics of anxiety.

Task The feeling of anxiety is found more in the emotional men, express your thought in the context of this statement.

(7) Anxiety is shapeless

Anxiety is an abstract thinking, the statement of the psychologists as- Freud, "in fact the man , who is filled with anxiety cannot think it that why is he worried, consequently there is no form of it.

(8) Anxiety is added with mental excitement

Mental excitement is one of the characteristics of anxiety. As much as the anxiety, so the mental excitement or it can be said that as soon as mental excitement grows, anxiety will also grow, because anxiety is a mental movement in itself.

(9) Lack of intelligence skill

Anxiety is inspired by fear, baseless and daydreaming, by which anxiety man lives in more mental and physical stress. So intelligence skill can be developed in such men, but there is lack of intelligence in them.

(10) Sufficiency of dreams filled with the future doubts

Psychologists as Coalman have confirmed that due to anxiety, such dreams come during the time of sleeping, in which the doubts of future play its games. Such dreams are added with especially failure and convict.

(11) The feeling of inappropriate is developed

Anxiety arises the feeling of inappropriate in man itself. This feeling can be related to the educational, family, social and any other matter. This feeling is the symbol of self inferiority.

Notes

(12) Disorder affect

Anxiety creates undeveloped environment in the field of both life of specific and general, as feeding, living, thoughts, learning-teaching and disorder and instability is found completely in the field of life.

(13) Other

There are many characteristics of anxiety except it, as- living fearful, lack of concentration, excess of selfishness, soon restlessness and desire less etc are the development of the feeling is the characteristics of anxiety.

10.7 Summary

- It is natural for a man to be fearful. Sometimes he gets worried and fearful with the curse of god and goddess and other times worried with personal and social problems. Freud (1939) considers the conflict between Id, ego and super ego as the important cause of anxiety.
- In fact anxiety is curse for human life, when it is out of control. When a little bit anxiety is told necessary for the development of man, on the other side, out of control anxiety is the cause of destruction of man. Especially it is dangerous for the teachers, trainers and the students of school.
- The anxiety that take birth in teachers and students turns into horrible form. They also have the same reason, which are produced in any men by the explosion of anxiety.

10.8 Keywords

1. **Anxiety**—Bad worry
2. **Defective Learning**—Mistakes in learning.

10.9 Review Questions

1. Describe the kinds of anxiety.
2. Write the note on the nature of anxiety.
3. Throw light on the causes of anxiety.
4. Write the characteristics of anxiety.

Answers: Self-Assessment

1. Solian 2. W Lisker 3. Coalman 4. R.R.Williards

10.10 Further Readings

Books

1. Education Psychology—*S.H.Sinha and Rachna Sharma, Atlantic Publications, New Delhi.*
2. Education Psychology—*S.K. Mangal – P.H.I, Learning Pvt, New Delhi.*
3. Psychology – The Study of Human Behavior—*Brij Kumar Mishra, P.H.I.Learning, New Delhi.*
4. The Development of Learner and Education Learning Process—*A.K. Verma, Hindi Book Center, New Delhi.*

Notes

Unit-11: Adjustment

CONTENTS

Objectives

Introduction

11.1 What is Adjustment?

11.2 Frustration

11.3 Mental Conflict

11.4 Methods of Resolving the Conflicts and Tension Reduction

11.5 Summary

11.6 Keywords

11.7 Review Questions

11.8 Further Readings

Objectives

After studying this unit, the students will be able to:

- Know about adjust and frustration.
- Understand the mental conflict.
- Understand the methods of resolving the conflicts and tension reduction.

Introduction

It is compulsory for man to adjust according to the situation to lead a successful life. Person has to face many favorable as well as adverse conditions. Every person try to adjust in these conditions as per their capability. Some people successfully face the adverse conditions while some fails and lose their mental stability. These people are victim of frustration, mental conflict and stress. These affect the mental and physical health. So to understand the problems related to personality adjustment, meaning of adjustment, maladjustment, frustration, meaning of conflict and stress, reason and methods to resolve will be discussed here.

11.1 What is Adjustment?

Meaning of Adjustment—Adjustment is called fine-tuning, correction and amendment also. Adjustment is made by combining two words - connection and Events. Likely means well - like, well,

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that means the system or society ie well as arranging and organizing. Adjustment means well managed or the process of making things comfortable so that the requirements of man can be pleased and mental conflicts can be avoided. This universal truth can't be ignored that like other species human being also have its own requirements or needs. These requirements motivates person to achieve his goals and makes him to move ahead. When person gets his objectives easily he finds pleasure. But when he has to face difficulties on the way then he finds it a nasty experience, which is called as frustration. Thus, when a person has to face the powers force against his wills and interests in that situation mental conflict arise within his mind. Thus as a result of frustration and mental conflicts stress get birth. Due to this stress a certain kind of disorder took place in his mind, then he try to eliminate difficulties to eradicate stress. If he get success in to eliminate these difficulties by remaining within situations and creativity, it means he have established adjustment with environment. If he gets failed in this process and adopts erroneous way then it gives birth to Maladjusted. Generally this process of adjustment is continuous during the life of a person. **Gates and others** write the meaning of 'adjustment' as there are two meanings of the word 'adjustment' at one hand it is a continuous process in which a person get changes in his behavior to coordinate with environment. On the other hand adjustment is a well-balanced state after reaching which we say the person is well managed.

To know the process of adjustment more clearly we should know about the characters of well adjusted person and maladjusted person.

Characteristics of well adjusted person: Following characteristics can be seen in a well adjusted person on the basis of definition of adjustment and on the analysis of behavior:

1. A well adjusted person acquires the knowledge of surroundings and situations and has control over them and behaves accordingly.
2. He makes a balance between him and surroundings.
3. He consumes the surroundings and things according his needs and determination.
4. He does not hurt other people of society for execution of his own desires.
5. Maintains his working ability even in complex situations and remains content with it.
6. He has the feeling of socialism, good behavior, well balanced from the view of sentiments and is always ready to accept responsibility.
7. He has clear objectives and is able to face difficulties bravely and in proper way.

In the same way Gats and Other write that, In short, the Well adjusted person is one, whose needs and satisfaction in life are integrated with a sense of social feeling and an acceptance of social responsibility.

Characteristics of Maladjusted Person: A maladjusted person can be identified by following characters:

1. Maladjusted person is incapable to develop him according to the surroundings.
2. He is of unfixed mind, unstable mind, unbalanced from the view of sentiments, undefined objectives and he is the feeling of enmity, hate and revenge.
3. He is unsocial, selfish and remains miserable.
4. He loses his mental balance while facing little problem.
5. Victim of nerve diseases, full of mental conflict and stressful.

From above characteristics we came to know that maladjusted person is full of mental conflicts and frustration. Actually both the two (mental conflict and frustration) are more obstructive on the way of adjustment of person. In short, it is good to understand meaning, cause and results of these.

Task Define the meaning of well adjusted and maladjusted person.

Notes

11.2 Frustration

Meaning of Frustration—Often a person bares various little difficulties and hindrances daily. Most of them can be solved easily. Sometimes such difficulties arises which obstruct the needs of a person, means they create disturbance in execution of his objectives. Person makes efforts to eradicate these disturbances. He feel pleasure while he finally reaches to his goal by eradicating these problems, but when he get failed to reaching his goals by removing hindrances even after making huge efforts then it makes him unhappy and feels failure or disappointment, it is called frustration in the language of psychology. Frustration is called despondency. Thus it is clear that "frustration is that stage of mind of a person that he gets after facing various hindrances and unfavorable alternatives".

Did u know? That according to a scholar "frustration is that extreme feeling that a person feels after getting fail or being unsatisfied"

Causes of Frustration—There are various causes and sources of frustration, some of which are as following:

1. **Physical Causes—**Whereas the various physical or natural things are available in environment are helpful in pleasing needs and wants of a person, on the other hand various physical elements such as, famine, flood, drought, earthquake etc. proves barriers in execution of needs and wants, that creates despondency within the mind of person.
2. **Personal Causes—**Some people or children due to their mental, emotional or physical flaws such as lack of mind, fear, feeling of inferiority, inability, blindness, deafness etc. remains unsuccessful to accomplish their needs and desires. It creates the feeling of un-satisfaction and frustration in mind.
3. **Social Causes—**Strict laws, customs, culture, cast, religion and laws are also barrier in the accomplishment of desires and needs of a person, that introduce person with hopelessness and un-satisfaction and he feels obscurity in adjusting with society.
4. **Economic Causes—**One of the major factors of frustration is economic factor. Due to the bad economic conditions a person is unable to fulfill his various desires and needs and could not achieve his goals.
5. **Moral Measurement of Person—**There are some moral idols in his life such as non-violence, laying etc. due to which he is unable to accomplish his some needs and desires. For instance, passing an exam is the goal of a student, but difficult question-paper is present in form of barrier on his way. He finds cheating as a way to eliminate this barrier, but at the same time he came to know that it is an offence and pilfering, means it is unethical. He dumped cheating for his moral idol, but gets failed in exam as he could not solve question and feels un-satisfied and despondency.
6. **Current Circumstances and Stages—**Due to the social dearness, poorness, unemployment, unsuitable place for living, restless family environment etc. some requirements of child get un-fulfilled, it results as hopelessness. For instance after passing high-school a student wants to get higher education, but due to poorness or due to lack of inter-school his desire remains incomplete and he feels unsatisfied and frustration.
7. **Irrelevant/irregular Needs or Goals—**Due to many contrary needs or aim mental conflicts arise, as a result he has to face bleakness. For example a child feel important to go to school and also wants to stay home for the ill ailing father, but out of the two he can opt only one, therefore he will find failure or frustration in not accomplishing other objective.

Adverse Impacts of Frustration—Frustration adversely affects the adjustment of person with development and environment. Some of its adverse impacts are following:

1. Barrier in the development and adjustment of person.
2. Instability enters into the emotional situation, due to which he feels confuse and instable.
3. Unique personality symptoms.
4. Smugness and Undisposed.
5. Increase in mental stress and mental frustration.

11.3 Mental Conflict

Meaning of Mental Conflict: A person has various desires, needs and interests, but it is not necessary that all his desires and needs get accomplished. He has to face some adverse situation in surrounding and a certain kind of war starts within his mind. Thus when a person has to choose one out of two opposite objects then he has to face war. For instance a student whose BA final year exams are going to be started next week, he gets an appointment letter in the same week for a job. In such a situation he wants to appear exam as well as job, but finds difficult to choose one of the two alternatives. Some kind of instability arises within his mind. What to do? In psychology this situation is called conflict.

According to L.D. Crow and A. Crow, "Conflict arises when an individual is faced with forces in his environment that act in opposition to his own interest and desires."

While defining mental conflict Frayed wrote, "Mental conflict is caused by the lack of adjustment between Id, Ego and Supper ego."

Causes of Mental Crises: A definite list of causes of mental crises could not be presented. There are so many reasons of it, still its main causes are as following:

1. Biological and Physical Causes—Under this physical elements and biological wishes, such as requirement of food, wish for sex etc. and physical stages are included, that create mental conflict.

2. Momentum Causes—Satisfaction or un-satisfaction of wills, happiness, sorrow, sex and emotion-glands also create mental conflicts.

3. Social Causes—A person has to face mental conflicts due to the regulation, customs, culture, moral ethics, behavior, cast, thought and religion of society.

4. Economic Causes—Even after good economic conditions a person has to face mental conflicts at every step while accomplishing his needs and choosing relevant way of life.

Adverse Impacts of Mental Conflicts—Due to mental conflicts, barriers are created in general development of person and adjusting with environment and his entire personality get adversely affected. Some of its main adverse impacts are following—

1. Special Mental Activities—At the stage of mental conflicts all of his mental activities get affected. There is high quantity of un-remembrance, see more dreams and feel difficulty while facing reality.

2. Showing Un-ordinary Emotions/Momentum—Symptoms of happiness, sorrow, un-encouraging, sadness etc. can be experienced within person differently.

3. Unsocial Behavior—Seclusion, social-disincline and introversion behavior can be seen.

4. Criminal Tendency—At the stage of mental conflict, mental stability of a person get destroyed. He could not what is right and what is wrong and he moves towards social and constitutional offences.

5. Mental Frustration—Due to the adverse effects of mental conflicts person get nerve diseases and mental stress keeps on.

Entire personality of a person gets affected by above said frustration and mental conflicts and then he gets complexity in adjusting with his surroundings.

Notes

11.4 Methods of Resolving the Conflicts and Tension Reduction

Due to the emotional instability, extreme un-satisfaction and mental conflict or due to the excess stress person starts loosing his mental balance. In such stage to avoid these harmful events person starts getting some securing activities these are to be defined under upcoming… solutions. **Psychologist Cameron, Saffore and Shohev** told about two kinds of adjustments: protective methods and Escaping methods. The main function of protective method is to protect the ego of person. Main objective of escaping methods is to get person out of the stressful situation and help him in personal adjustment. This personal adjustment is appropriate from the view of person, but not from social view, because person is only called adjusted when his behavior is according to the measurements of society. Here we are explaining about protective methods of adjustment. Psychologist **Cameron** defines about following five protective methods:

1. Attention Getting.
2. Identification.
3. Compensation
4. Rationalization.
5. Projection

From the View of convenience all the methods can be divided in following four parts—

(a) Direct Methods

(b) Indirect Methods

(c) Compensatory Methods

(d) Aggressive Methods

Now each of the above is defined as following—

(a) Direct methods—Direct methods of reducing stress are those in which a person makes efforts in his consciousness/awaking stage. He use his logical power to use these methods. Some direct methods are following:

1. To Finish or Eradicate Hindrances—Person try to eradicate or completely destroy those barriers in consciousness form, which occur during his way to accomplish his needs or reaching his goal. In this way by eradicating hindrances a person can succeed in achieving his goals and his mental stress disappears. For instance, when a child could not solve the complete question paper in exam and could not get success due to his slow writing speed, which increases his mental stress day by day. Slow writing speed is the barrier in his success. Therefore he eradicates this hindrance by improving his writing speed by continuous practice and get succeed. It reduces his mental stress. If we deeply study daily life of a person then we will find that he uses this method most.

Notes When we do not get success in accomplishing any work, and then try to accomplish the work by efforts and practice. Thus we reduce our mental stress.

2. Find Alternatives—When a person could not eliminate the barriers of his way then he found new way. When he get success by finding another way then, his metal stress disappears automatically.

3. Attention Getting Mechanism—Child use this since the beginning of life.

According to **Shekhar** and **Shoven, "**Attention-getting is an act that makes person the focus of other people's behavior.

When a person feel himself neglected then he use this method to attract other people towards him. By this method he wants others to pay attention to him. It is the psychological need of person that he should be appreciated by others. Often the children could not get care from parents or treated as neglected in society use this method. This method can be seen in behavior related problems of flaws, which create difficulty in social adjustment, means this method is more faulty/defected.

4. Re-establishment of Other Objectives—When a person does not get success in achieving his goal after making all his possible efforts, then he adopts second objective which is almost same to the previous one that can be easily achieved. This re-established objective reduces his stress till some extent. For instance, students have the will to be professor in his college, but due to some problems if he could not be professor in college then satisfy him with being lecturer in the college. It provides him some mental relaxation and stress decreases to some extent.

5. Analysis and Decision—When there are more than one contrary desires or destinations a conflict arises within him and results mental stress. It is difficult for him choose between alternatives. He analysis all aspects of all the alternatives using his past experiences and choose which he finds most appropriate.

Self Assessment

Fill in the blanks:

1. If a person gets success to eliminate difficulties by remaining within situations and creativity, it means he have established ..... with environment.
2. frustration is that extreme feeling that a person feels after getting ..... or being unsatisfied?
3. When a person has to choose between two contrary and gets confused, it is called ..... in Psychology.
4. When a person fails to adjust with situation, in Psychology it is called ..... .

(b) Indirect methods—Indirect methods of reducing stress are those that a person adopts in unconscious form. For avoiding mental instability due to stress and feeling unwind. These methods are called **Defense Mechanisms**. These defense mechanisms are the attempts for getting adjustment through unconscious mind and an attempt for killing mental conflicts. Personality can be adjusted in various ways. Mental stress born by internal conflicts can be reduced by defense mechanism. Some of defense mechanisms are discussed below, which are helpful in reducing stress:

1. Sublimation—Sublimation is that mental process of an unconscious mind within which basic-reacting power or sentimental powers, turns pashvik requirements or desires towards an artificial direction which is acceptable by society. For instance, sex-tendency of a person moves towards formation of artistic behavior, music, religion and spirituality. This rectifies basic behavior. Mr. Frayed is devotee of this belief.

2. Withdrawal—Often person deduct himself from the sources arising distress or stress or withdraw himself. Such person is called withdrawer. These people do not hurt others, but when their withdrawal becomes extraordinarily unsocial then they feel very difficult to be adjusted. For instance when a child is teased or insulted by his friends in class, then it is possible that he try to keep himself away from others. If his behavior becomes extraordinary then it will be very difficult for him to be adjusted. Therefore withdrawal should to happen to some extent only. Withdrawal can be seen in following two ways:

(*i*) Regression—Actually regression is the reaction of the activities that a person could not understand in his life which is based on the reaction of childhood. It means when stress arises due to dissatisfaction then he returns back to his past experience for avoiding unhappy experience. For instance an old man behaves like a child, such as starts crying, shouting, stammering, etc.

(*ii*) Day-Dreaming—Day-dreaming is the process in which a person lives in the world of imagination by forgetting his present unpleasant happiness. With the help of day-dreaming a person gets pleasant

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feeling by imagining his failure as success and thus reduces his stress to some extent. For example a child constantly failing can see himself as passing in best grades or holding a higher post. In day-dreaming a person sometimes feels himself as a hero and sometime as a looser. The person thus gets an instable happiness. But the excess of day-dreaming lacks in adjustment.

3. Identification—Identification is an ordinary stage of adjustment. This tendency can be found in most of the people. When a person get failed in a particular field and have lack of ability then he identify with a successful and able person means feel his abilities within himself. For example Mohan is dull and is weak in sports, but his father is a professor in a college who always passed with good score and was a good player, so he introduces himself as the son of an intelligent professor, instead of his personal qualities as he is afraid. Identification reduces personal feelings and inferiority remains away. Identification is only good to reduce inferiority and stress, but when it affects social behavior then it is dangerous.

4. Becoming Dependent—When a person gets failed even after making continues efforts then he handover his responsibilities to solve his problems to a much intelligent and powerful person. This attempt reduces his mental stress and along with it a combined attempt of both make problem solving easy and dependent person get more benefit.

5. Rationalization—To understand the process of rationalization it will be better to understand it as famous phrase 'Sour grapes'. when a person get failed in any field he gets a less painful reason rather than real cause. For example getting late for school he tries to evade mental stress.

6. Repression—Person wants to forget his bad experiences for reducing stress. Thus, he suppresses his basic desires and wants who are in anti-social form, which is requiring a momentum for its presentation. Suppress means not presenting wills and desires. It is believed that behaviors based on inherent factors are often unsocial. They include the opponent factors of morality and respect. Society does not allow the presentation of this kind of behavior freely. it is controlled by society to some extent. For example, if there is no social control over the lewdness of a person then he may do many offensive acts and at that time there will be no idol of society will remain. Therefore a person suppresses his anti-social wills. But the process of repression is not good, because due to this other behavioral flaws arise.

7. Projection—Often it is seen that a person blames other factors of surrounding or people for his own failure, here it is right to say that 'naach na jaane aangan Tedha'. For example, on not selecting for a post, a person said that I was able for it, but selection committee did partiality. In the same way on getting failed student blame test-paper and examiner for it.

8. Reversal Formation—The function of reversal formation is to keep away mental conflict. It is that activity of unconscious mind, which creates such behavior, interest, thoughts and feelings in conscious mind against the partially suppressed wills. For instance, a person argues about moral ideas to suppress his extreme sex tendency and pretends his hate for it.

(c) Compensatory Methods—Often when a person get failed in a particular field or realizes drawbacks within him then he try to get success in some other area or to make more efforts in the same field to demolish his limitations. It reduces his mental stress. **Crow** and **Crow** define compensation as "Compensation may be defined as the utilization of extra energy in the development of a trait or traits to alleviate the tension caused by a real or imagined defect."

A person compensates both in **direct** and **indirect** way. Direct way for compensation is that in which a person get success in the same by striving hard. For example a weak student became a good one by constant study. The indirect method of compensation is that, where one gets failed in a particular area but get success in another field. Thus his feeling of inferiority raised by failure in first area gets away and his mental stress get reduced. Example, A weak student compensate himself by being a good sportsperson, speaker or actor. Often all the people can be seen in compensation from practical life to another field. Wearing high heels by short height person, use of more cosmetics by less beautiful person and wearing bold cloths etc. are the compensating methods. Here reader can ask that more beautiful

person also use cosmetics and bold dress then what do they compensate? Here it can be said that they may be beautiful for others but they themselves believe that they are less beautiful than someone else. But it is a fact that less beautiful person man or woman uses more cosmetics and bends towards fashion than more beautiful person.

(d) Aggressive Methods—Aggressive method refers to that method in which a person damages to the person or to the factor which is creating barrier in his want satisfaction and thus tries to reduce his mental stress. Aggression may be of two kinds, direct and indirect. Direct aggression is that, in which a person only attacks on the person or factor who/which is responsible for his unsatisfaction. For example a students who wants to do cheating but invigilator stops him in doing so means, he is barrier in his goal accomplishment, then student attacks on invigilator only. Here the objective cheating is not completing hence the tendency to attack arises. Indirect aggression is that in which a person attacks on another person or thing while he is unsatisfied. It is called displacement of aggression also. Such as, the above student does not attack on invigilator but fights with friend or brother after exam and thus reduces his stress. Sometimes person punish himself also it is called inter-directed aggression/attack. Inter-directed aggression is mostly seen in women, children and weak peoples. When kids get failed in something they bite themselves or chop their shirt. In the same way women and weak people when failed in something or insulted by someone beat themselves. This can reduce stress but it has dangerous Sid effects.

Therefore this method can't be contemplated as a good method. Various methods such as desired surrounding and catharsis etc. are there other than above said methods which can reduce stress and person can be well-adjusted.

11.5 Summary

- Person has to face various favorable and unfavorable situations. Everybody try to adjust himself according his ability. Some of them defeat unfavorable situations and some of them loss their mental stability after defeated by them. This kinds of people becomes the victim of stress or un-satisfaction, mental-conflicts and frustration.
- Only necessities inspire a person for goal accomplishment and he moves forward. When person easily achieve his objectives then he find pleasure. But when he has to face difficulties on the way then he finds it a horrible experience, which is called as frustration. In the same way when a person has to face the powers against his wills and interest in that situation a mental conflict arises within him. Thus as a result of frustration and mental-conflicts, mental stress arises. Because of the frustration a certain kind of fluctuation get birth within the mind of a person, for eliminating this he tries to eliminate barriers. If he get success into eliminate these difficulties by remaining within the boundary of situations and creativity, then he establishes adjustment with environment. If the person gets failed in it and adopts erroneous way then it gives birth to Maladjusted.
- When a person get failed in achieving his goals by removing hindrances even after making huge efforts then it makes him unhappy and feels failure or disappointment, it is called frustration in the language of psychology.
- When a person has to choose one out of two opposite objects then he has to face conflict. For instance a student whose BA final year exams are going to be started next week, he gets an appointment letter in the same week for a job. In such a situation he likes exam as well as job, but finds difficult to choose one of the two alternatives. Some kind of instability arises within his mind. What to do? The situation in which he is, it is called mental conflict in the language of psychology.

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- Psychologist Cameron, Saffore and Shohev told about two kinds of adjustments: Defensive methods and Escaping methods. The main function of defensive method is to protect the ego of person. Main objective of escaping methods is to get person out of the stressful situation and help him in personal adjustment. This personal adjustment is appropriate from the view of person, but not from social view, because person is only called adjusted when his behavior exits within the measurements of society.

11.6 Keywords

1. **Frustration**—Disappointment, dissatisfaction
2. **Ill**—Not well
3. **Maladjustment**—Unable to adjust according to the situation

11.7 Review Questions

1. What is adjustment? Write the signs of adjustment.
2. What do you mean by frustration? Tell the reasons of frustration.
3. What do you mean by mental conflict? Explain the reasons of mental conflict.
4. Describe the Methods of resolving the Conflicts and Tension Reduction.

Answers: Self-Assessment

1. Adjustment 2. Fail 3. Mental Conflict 4. Maladjustment

11.8 Further Readings

Books

1. Adhigamkarta Ka Vikas Evam Shiksan Adhigam Parkiriya—*A.K. Verma, Hindi Book Center, New Delhi.*
2. Education Psychology—*S.K. Mangal, P.H.I. Learning Private Ltd. New Delhi.*
3. Education Psychology—*S.H. Sinha & Rachna Sharma, Atlantic Publication, New Delhi.*
4. Importance of Education for Children and Information—*Seema Chopra, Hindi Book Center, New Delhi.*

Notes

Unit-12: Adolescence

CONTENTS

Objectives

Introduction

12.1 Characteristics of Adolescence

12.2 Problems of Adolescence

12.3 Nature of Education in Adolescence or Guiding and Counseling Adolescents

12.4 Adolescence: A Period of Storm and Stress

12.5 Role of the Teacher

12.6 Summary

12.7 Keywords

12.8 Review Questions

12.9 Further Readings

Objectives

After studying this unit, the students will be able to:

- Understand the characteristics of Adolescence.
- Understand the problems of Adolescence.
- Understand the nature of education in Adolescence or guiding and counseling Adolescents.
- Understand the stress and period of storm of Adolescence.
- Know the role of teacher

Introduction

Adolescence comes after childhood. This stage starts at age of 12 years and continues till the age of 19 years. Psychologists call it the period of storm and problems. Especially sexual changes take place due to it life of adolescence fills with tension, worry and storm. So a proper guidance is required to the adolescence at this stage. In western countries it is also called "Teen Age". This is considered as the most complicated stage of development.

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12.1 Characteristics of Adolescence

Main characteristics of Adolescence are as—

Physical Development: Two kinds of changes take place at adolescence: internal and external. Personality of adolescence develops according to these changes. At this stage flexibility of bones comes to an end and rigidity enters into them and bones take cylindrical shape. In girls fat starts gathering at their hips and starts gaining weight and symptoms of maturity can be experience on the faces of girls and their face say that now they are going to be mature. Pimples arise on face. Hair grows on certain body parts of boys such as chest, beard, secrete parts etc. moustache and beard also grow in some girls also, if their glands do not perform appropriately. Sweat of the boys produces a certain kind of smell. The most important giving of this stage is, complete growth of the reproductive parts, by which reproduction capacity arises within them. This change can be experienced in girls more quickly. Their breast becomes heavy. Sometimes breast develops before time, when the glands do not work properly. Chest of boys starts getting broad. Spermatorrhea in boys and menses within girls are the identity of being adolescence. Along with this internal parts of body also grow completely. Such as mind, heart, breathing, digestive system, nerve system etc. Immunity also develops within body.

Mental Development: At this stage unsteadiness ends and the concentration power develops and recollection-power increases. Girls have comparatively more cramming power than that of boys. Adolescent run in the world or imagination and also became the victim of day dreams. Growth of imagination is much higher in boys than that of girls. Their reasoning power increases and interests for various things also arise. Boys are interested in football, kabaddi and girls are more interested in dance and singing. This stage also gives birth to the boldness. Boy's emphasis on making their body strong whereas girls concentrate on beauty. The interest for comedy, story, poem, satire, patriotism, adventure, love-stories and sex arises within adolescent. Social awaking also arises and their discussion area also gets limited. Boys are interested in discussing about girls and girls are more interested in discussing about boys. At this stage adolescence also made planning for future.

Social Development: From the point of view of social development, now the interest of adolescence moves towards outer world instead of family. He can behave rudely towards his family but cannot abandon his friends. He only sees his criticism for him in the guidance of parents. He does not surrender easily; instead of it he became obstinate. He does not compromise with their thinking and challenge them, along with it the feeling of social awaking and religious feelings also arises within him. He composes a group and finds himself much comfortable within it. Therefore he spends much of time outside home. But some teenagers are more aware about their future and spend much of their time in studies. Adolescent choose an ideal at this stage, who can be a teacher, player, scholar or actor. If a proper guidance is not given to this feeling his existence may be on danger.

12.2 Problems of Adolescence

Main problems of adolescence are following:

1. Problems of Self-respect, and Security: Both these three things make adolescence more worried. From the view of self-respect he wants respect at home or group wherever he lives. Therefore he is eager to be class-monitor, captain or post-holder of student union. He wants that the work done by him should be appreciated; he should get the care and love of parents, teachers and friends. The poor adolescents are more worried about security. As a result they become the victim of inferiority. If these requirements are fulfilled they better adjust otherwise their personality becomes faulty in the absence of these requirements.

2. Problem of Independence: At this stage adolescent want to be self dependent and he wants to fulfill the future dreams. He wants a complete freedom to accomplish these dreams, such as they think the advice of others is an interference in his way, but the adolescent is not mature enough so that he can be

left alone for taking decisions, it is not appropriate. He will definitely require the guidance of parents and teachers. Adolescent does not understand this fact and creates complications for himself on the way to accomplish his objectives. Therefore he needs to understand his limits and capabilities and get his objective with the help of others. The help taken from others should not be treated as the with ego.

3. Need for Adventure: This stage is also called happy or pleasant stage. Adolescent thinks about excess of happiness. He likes to watch movies, go to hotels, read or write novels listening songs, acting. Doing friendship with opposite sex is the strongest determination of an adolescent. Boys are always eager to talk with girls and vice versa. They like to have knowledge regarding sex and for the fulfillment of this they read the sex related literature, watch animal intercourse, nude scenes of movies and discus this with friends and express their feeling by writing and drawing abuse things on the walls of toilets. They have interest in homosexuality, opposite sex, vulgar talks, writing love-letters etc.

4. Need for Self-support: An adolescent feels that now he is mature enough and he should not depend on parents. He also need money to fulfill his needs, therefore he wants to be self dependent and wants to choose an occupation. Initially these thoughts seem to be an imagination, then as rubbish things and finally he gets serious about achieving his objectives. It is usually seen that the adolescent of poor families do not like their parents occupation, whereas the adolescents of higher class are interested in accepting their parents occupation. This feeling can be seen in the behavior of the adolescents who have strong feeling of it. Adolescents of the big cities are more eager about their goals.

5. Threat of Being Isolated or Need of Belongingness: Both the feelings are always influenced on adolescents. They are more dependent on their friends for their emotional satisfaction. The wants to get love from others and also wants to give the same to others also. They can't bear the sulking of their friends. They cannot concentrate on anything. They feel themselves secure in group and on the contrary if they do not find place in the group or get insulted in the group they became sad sometimes which can be dangerous.

6. Adherence to Codes and Morals: Adolescent believes that the moral values and social values are adherence. He has to adjust himself with various values at the same point of time. Together he has to be loyal to the strict discipline of parents, school environment, feelings of friends etc. In this situation at any specific time the feeling that gets strong adolescent moves towards it, but in the context of other values it is considered as contrary. Therefore he finds himself in complication in the endeavor to satisfy all. Therefore it is the responsibility of the parents, teachers and society to take him apart from this strain, for which they are required to understand the personality of the child and respect it.

7. Too much Fantasy: Imagination has the priority in adolescence. He moves in the world of dreams. Dreams inspire child and also helpful in partial satisfaction of wills. Adolescent is motivated to write poem, story, article etc. on the basis of dreams. He gets some satisfaction from the difficult jobs that he has performed in dreams. But the excess of dreams is also destructive for adolescents. Adolescent lost in dreams is keeps unsuccessful in realistic life. Developing imagining power is only good when it can be transformed in the form of literature.

8. Hero-Worship: Feeling of hero-worship arises within adolescents. They start obeying the model-person. They try to make themselves like their ideal. Ideals for them may be related to various fields. Actor of cinema, historical hero or religious leader, political leader or scholar may be their ideals.

Did u know? In India today most of the children have their ideals from the cinema industry. They start accepting their behavior such as, dressing, hair style and speaking.

At collage ideal of adolescent is a teacher, who affects them most. Adolescents always speak about their ideal. Sometimes this Hero-Warship can be seen in the form of love.

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9. Feeling of Revolt: Feeling of self-respect arises within adolescent. Now he do not like the control of parents or teachers. V.N. Jha wrote that, "with the introduction of the life the strong feeling of self-respect get birth within him. He likes to make himself free of bounding." **Kaulsnik** statement Kisore, Adolescent treats elders as a barrier in his way because they want to make control over his freedom. Adolescents start revolt against elders. They start opposing the orders of parents or teachers.

10. Special Hobbies: With the increase in age, changes in interest also take place. According to Straing interests of adolescent changes till the age of 15 years but after that certain kind of stability can be seen there. Boys and girls have some same interests and some different interests. Same interests are generally reading story, play, novels, looking good , wearing latest cloths of fashion, love with opposite sex, listening radio, watching cinema etc. Difference in their interest is as: Boys are more interested in playing and exercises and choosing right occupation but girls have special interest in music, art, acting, fashion.

11. Sex Development: Sexual development is the important symptom of adolescence. At this period reproductive power enters within reproduction parts of the adolescents. Psychologist believes that the reentry of sexual feeling of childhood enters at the stage of adolescence. Sexual feeling of childhood exists in sleeping form and it wake up at the stage of adolescence. Therefore adolescence is called as the awaking stage of sex-feeling. A blast of sex feeling took place at this period of time. A fever of sex holds adolescent. There are three important stages of sexual development in adolescent, which is as:

(*i*) Auto-Erotism: The first stage of sexual-development in adolescence stage is auto-erotism. Auto-erotism is of two types: according to the first type, adolescent believes that he is most beautiful. He uses makeup to improve this beauty. He finds pleasure in watching him self in front of mirror again and again. He mend himself, sometimes he continuously changes his dress to see which one is most suitable to him. Noyd called this situation as stage of Narcissism. According to the second type, adolescent touches its sexual-parts and feels happiness. Now he feels tickling in touching secret parts. It develops the bad habit like masturbation in adolescent. This habit of masturbation does not affect boys only, girls also became victim of it. Currently psychologist think that masturbation is obvious, still it these kind of un-natural things should not be appreciated.

Notes Adolescent touches its sexual-parts and finds sexual pleasure in it. He feels tickling in touching secret parts.

(*ii*) Homo-Sexuality: The second stage of sexual-development is homosexuality. At this stage person of similar sex falls into love with each other. Girls like to live, walk, eat, talk with girls and boys with boys. They can be seen as kissing each other also. Sometimes both two can be seen as engaged in such activities where they are arising their sex feelings together with. There are some factors responsible for homo-sexuality. One of the reasons of homo sexuality is putting girls apart from boys. When there is lack of opportunities to introduce with opposite sex then, at the stage of adolescence child satisfy his sexual needs through homo-sexuality. Same kind of situation can be seen in Indian society. Here boys and girls kept apart. Hence they think that homo-sexuality is the means to satisfy sexual needs. Homosexuality can also be seen in those institutions where there is lack of co-education. Due to the lack of co-education there are minimum opportunities to attract towards opposite sex and getting love. On the basis of the study Remje, Jhingran and Kinsey concluded that the high degree of homosexuality can be seen at the initial stage of adolescence. Kinsey believes that one fourth of the adolescents are affected by homosexuality. The feeling of homo-sexuality is comparatively high in the children who grow quickly, rather than of those who grow slowly. Sometimes the tendency of homo-sexuality enters in elder age after adolescence. This kind of situation is considerable. This kind of unnatural process creates barrier in the process of nature.

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(*iii*) Hetero-Sexuality: The matured stage of sex-tendency is hetero-sexuality which develops in later adolescence. It is the obvious and natural stage of sexual relationship. At this stage boys attracts towards girls and girls towards boys, they talk to each other and associate with each other. After getting more friends they used to watch cinema, do kiss and hug each other, some of them engaged in sexual interconnection before marriage. This stage is terrible and they are treating as deficient in society. Due to the fear of physical relationship parents try to control the interconnection of boys and girls which spreads miss-discipline within boys and girls. If boys and girls are appreciated for group working then a positive point of view towards sexual relationship can be develop within them.

12.3 Nature of Education in Adolescence or Guiding and Counseling Adolescents:

It is clear from the study of characteristics of adolescence that it is a period when a tide of power rises within child. The correct phase of education should be concern to use this power in better manner, which is helpful in satisfying his needs. Here we will discuss about nature of education:

1. Education for Physical Development: Physical growth took place very quickly at the stage of adolescence. Height increases. Exercises should be practiced in schools for complete growth of body. Along with this special attention should be given to sports.

2. Training of Emotions: Strong impacts of fear, stress, guilty, love etc. can be found within adolescent. Adolescents show their impacts in various forms. Emotions and momentum of adolescents should not be criticized. Momentum of adolescence should not be suppressed. Teachers should pay attention to the correction of their momentum. Adolescents take interest in study of poem, music; novels, story, and play etc. teacher should be attention towards the correction of these momentums at the time of teaching these subjects. Accordingly arrangements should be made for the transfer of momentum. It should be motivated to serve nation, religion and society.

3. Moral Education: Adolescent keeps in psychological quarrel. Therefore it is important to tough them moral education. Moral education should be practical instead of principal. Students should do the practice of truth, self-control, responsibility, justice and punctuality etc. Teachers should also present example in front of students.

4. Vocational Guidance: Generally adolescents are worried about their future. It is the responsibility of the school to guide student to choose occupation. In a country like India, where the problem of unemployment is very high selecting an occupation is very difficult task. Teacher should introduce students with various occupations during their education.

Task How much the current education system of India is eligible for personality development of adolescents? Express your views.

5. Motivation to Read good Literature: Psychologists believes that adolescents are highly interested in studies. At this stage they should be advised to which kind of literature they should study. They should be inspired to study the biography of great people and literature of fine quality.

6. Development of Social Traits: Social values should be developed within adolescents so that they can participate in the process of reestablishment of the society. Adolescents also have the feeling of grouping. Teachers should emphasize on group studies in schools, it can develop values like love, cooperation, coordination etc. within them. By the means of project method the quality of responsibility can be develop within students. It can also develop the quality of leadership. A democratic country

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like India needs the people who are eligible to provide good leadership. Therefore in such countries emphasis should be to make people social and capable to take independent decisions .

7. Use of Proper Teaching Techniques: At the stage of adolescence the development of mind is on the peak. His all the mental abilities develop fully. Therefore teachers should adopt that teaching technique in which students can get full opportunities for the practice of self assessment, self examining, and thinking and debating. At this stage also full concentration should be made on learning. Imagining power of adolescent also develops. Means teacher can also use it. Students should be provided with opportunities for self-representation. For this co-educational programs should be organized in schools.

8. Self Discipline and Self Control: Discipline should not be strictly impose at the period of adolescence. Adolescents oppose the control over them and create the problem of indiscipline. They should be motivated for self-governance. Discipline committee should be organized within schools and some student representatives should be appointed in that. Management of all the programs to be organized in college should be managed by students. This develops responsibility within them and they learn self control.

9. Behavior of Teacher: Behavior of teachers affects students deeply. An adolescent should not be treated as a child. Most of the parents treat their adolescents like children. This behavior irritates adolescents. Teachers should treat adolescents as an adult. They should have love and sympathy towards adolescents. This creates stability in the momentum of adolescents and they are inspired to do work. Skills of social behavior of adolescent develop.

10. Sex-Education: A high tide of sexual feeling arises during adolescence. Many of the problems of an adolescent are caused by sexual-feelings. This creates in-stability in the behavior, momentum and interest etc. of an adolescent. Scholars believe that there should be arrangements for sex-education of adolescents. An attempt for creating a positive view towards sex should be made through sex-education. Conflicts arise at two points of sex –education: first is that what should be the structure of sex-education and second what should be the appropriate manner for sex-education.

Initial stage of adolescence is full of fear and excitement. Wet dreams occur in boys at adolescence. Due to which his semen falls. Menstruation starts within girls due to which bleeding took place within them. As they are unaware of it, both of them are afraid of it. They believe that it is a kind of disease or symptom of it. Girls feel more humiliation as they have lack of knowledge about periods. Therefore in this situation knowledge about the structure of reproductive organs, their functions and semen related knowledge should be given to girls before menstruation and to the boys before spermatorrhea. A positive point of view towards opposite sex should be developed within adolescents. They should know about reproduction. But when teaching this, it should be keep in mind that sex-education will not create any adverse feeling within them. Along with this arrangements for moral and behavioral education should be made. Some scholars think that co-education should be emphasized. Co-education removes many sex related roomers can be clarified. Parents at home and teachers at schools should perform this duty.

Teachers should engage adolescents in such creative activities by which their will/path of sex-power can be changed. Literature, art, music, social service etc. are such activities through which the will of sex-power of adolescents can be bisected.

12.4 Adolescence: A Period of Storm and Stress

Adolescence is the stage where there is neither the childhood nor the thinking/understanding maturity exists. In this situation it is very difficult job for the parents to handle adolescents carefully. In this context a slight mistake can give birth to an unpleasant event. Then how will adolescence get a right path?

Often people talk about children and adults. Those adolescents are generally left behind those who does not counted with children and not in adults. Means, the teenagers of thirteen to nineteen years of age, who are passing through physical and mental change, and those whose problem keeps on complicating. Sometimes they became 'problem child' for school and family.

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Their problems are also strange, such as, "I am a student of 18 years. I am in an inter-cast love. He also likes me, but now days he is attracted towards a girl. I can't live without him. I think of suicide." Or "I am a thirteen years student of class eighth. Nobody likes me at home. Parents always scold me. I could not concentrate on studies. This year I got failed. Often I think of escaping house." In the same way beauty and sex-related questions, problem of not spending time with parents, description of getting in bad company.

They are the children of that age group, who get rebuked at their suggestions that ''there is no need to speak between elders….." or "a child should behave like a child." They are scolded on mistakes by saying "you have grown up without any intelligence." Or "When I was of your age. I managed whole household". Teenagers are forced to walk on the edge of sword. Caught between two stools. Adolescence is that phase of the age where childhood is passing away and maturity is knocking to enter. At this stages he afraid of physical changes. Girls get tensed about menstrual cycle. And boys feel same due to the growing beard, moustache. Due to armonal changes they are tensed.They are attracted toward opposite sex. At this age most of the children get fall in love, which is actually not love. They believe the attraction towards different sex and behave according it. Lack of concentration in studies is obvious in this stage.

Disinterest shown by teachers in school and the physical punishment affects deeply. Attraction or enmity for a special-teacher is very obvious. Children of this age require special attention, love, co-ordination, then only they maintain their self-confidence. Adolescent reacts differently for a punishment or insult that he tolerated in childhood. Extrovert children come to give instant reaction while introvert Children suffocate. Tension between parents, social-economic business, intolerant towards child and lack of dialog creates anger in child. They get tired with home environment. As a result they wants to spend most of the time out of the house. For that they start pretending, laying and wants to accomplish their objectives.

They treat the points of their parents as verbal communication. They do not agree with the points their parents. Sometimes they react against parents intensely. In most of the cases, they do that to get attention of parents. It a psychological problem, its solution can be find with intelligence. Strict steps enforce adolescents to take wrong decision such as escaping from house.

At the stage of adolescence children behave emotionally. It is their negative as well as positive point. Creative/reconstructive values can be developed by directing this sensitivity appropriately, also this emotional attitude push them into the world of dreams and made them escaping, lazy and useless. It is good to be fabricating, but the adolescents living in world of imagination get disappointed when the dream comes to an end. In this situation whether it's a girl or a boy it is good to made them busy with their favorite activities. They can be taught painting, signing, dance, writing etc. according their interest. Adolescents interested in sports can get coaching of specific sport, swimming which will help them in physical exercise. As they are busy their mind will stable. According to the time children can be specialist of their field. These interests of adolescence can be their occupation.

Other than personal problems of adolescence question regarding their carrier also arises at this stage of adolescence. Ambitious parents are more aware about the bright future of their child it influences the yielding mind of an adolescent. Selection of subjects in class according career, restlessness of getting desirable subject, selection of school and expectations of parents psychologically put child under pressure.

Self Assessment

Fill in the blanks:

1. Western scholars called adolescence as ..... .
2. At the stage of adolescence various problems occur due to ..... .
3. Age from 12 years to ..... is called as adolescence.
4. At the adolescence attraction towards ..... sex increases.

School environment terrorize adolescents. Selfish teacher emphasizes over private coaching rather than class studies. Insult children again and again in class. They also warn about failing student in the case

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of not getting coaching. Aware parents do not take interest in getting coaching from school teachers. In this situation what should be done by child? An adverse impact of the conflict of school and house is that student stop going school. He returns home after spending his school time in a park or cinema hall with friend(s) rather than going school. As a result he get failed in class. Ones he get last in studies then this process keeps on moving. Then parents get worried about.

Adolescent learn very much through various television channels. An adverse aspect of the advertisement telecasted for the precaution from AIDS is that, adolescent starts understanding something about sex-relationship and homosexuality at small age. This little information proved injurious. For the solution of curiosity they start learning adult contents and get misled. At this time attraction towards elder man or women also increases, the excitement of getting experience of sex with so called uncle-aunty finally becomes the reason for aversion, complex, guilty feeling and psychological disorder.

Indian society is not appropriate for the free minded discussion on sex. Date problem, kiss, hug, discussion about male or female friend between father and daughter, telecasted on foreign television channels are not in trend in our middle class society. Sex-education is only in process of thinking. Girls wants to wear shot dress like as on television, wants to make boyfriend, but are often unable to maintain the purity of this relationship. Pregnancy before marriage is a common think in foreign but our society is unable to identify these values right now.

Western countries are experiencing the result of care free sex-relationship. Our country is also now grip in the form of AIDS, but the western countries are now influencing with our beliefs and values. Now they are inclining towards behavioral….. yoga, Dhyan and worship.

It's a psychological truth that at the stage of adolescence children considers them as intelligent and believes parents are comparatively fool. It is the reason that's why they start lying parents, as a result often fall into trouble. Bragging became their habit. Some children do not show their result to their parents till the end, increase numbers by editing and making duplicate signature of parents became obvious things for them. Children make such innocent faces that their teachers and principle also get cheated by them, then cheating parents is not a difficult task.

The offence of violent, theft, robbing also found in this period. Though the number of girls in this area is comparatively very low but the incident of murdering a girl by two girls was breaking news two year ago around the country. Therefore it should also be considered.

Stress and depression can also be seen at the stage of adolescence. Mostly the reason behind it is higher ambition, enmity and expectation more than capacity. Parents expects very much from their children. For them they are horse of the race who has to come first. Children are also hopeful and at in case of failure take impatience decision like escaping from home or suicide.

Now a day's society is passing through Solstice period. Older trends are now breaking, new are in the process of constructing. Older values are breaking down, new are still not formed. In a society where, there is a difference between doing and saying, on doing the same thing results different, it is obvious for the adolescents to get misled.

In this situation a feeling for security should be developed by both the sides i.e. school and family. Child should be trusted so that he can also trust you and himself as well. There should be provision for punishment on mistake it should be reformative and in optimistic manner.

Adolescents are emotional, sensitive and they are full of energy. This energy should be used for noble cause. Education should be purposeful and occupational, which can guarantee for a secure future.

12.5 Role of the Teacher

Enthusiasm of adolescents can be usually arises in the form of ego, arrogance and breaking trends. Sometimes this deformation reaches to the vulgar provoking. It is the duty of the teachers to have an eye of love and an eye of reforms towards the children of this age group. Eye of love because the sweet

relationship can be developing with them and the situation of conflict could not arise and the cross eye of reforms to control their bad habits and drawbacks. The said matter is important because it is not possible to get him or right track without strict attitude. Only by saying with soft attitude they treat it as a joke and cannot understand the seriousness of the mistake and sometimes comment adversely. It is intellectual to get the middle way and the objective of reform can be fulfilled without increasing arrogance.

The situation for the moral education at adolescence is very critical. It cannot be solved by teacher or parents alone. Both of them are afraid of clash. On explaining they show rudeness and come to opposing. A punishment cannot to be given that can harm their future and became a reason for insult. In this situation both the parents are teachers should find a way with together. There should be inter communication among them and a way should be fined so that children do not be rebel. They should be explained and should provide leadership of some work. Generally the feeling of rudeness arises from the will of leadership and children do something wrong to prove themselves better than others. Such children should be introduced with the great people who compromised their ability and life for others and finally became comparatively special than others and achieved glory. Talent should be understood as a double edged sword, who misused it he became culpable, defame and suffered sentence. On the contrary who had used their talent carefully moved ahead, became great. If the talents of such adolescent get right direction then he may do some valuable things in his life which may prove valuable not only for him to the entire society also. Talent is a double edged sword, if it gets the wrong way then it destroys itself and others also, but if it is used for noble causes then it does such things which makes it incredible and to the person glorious. It is really a tuff job to handle such people but, if parents and teachers strive together then it is not so difficult.

12.6 Summary

- Adolescence enters after childhood. This stage starts from 12 years and continuous to the age of 19 year. Psychologists called it as a stage of problem. Specially from the view of sex, various changes took place during this period due to which life of and adolescence is surrounded by tension, worry, struggle etc. Therefore it is essential to guide adolescents. Western scholars called it 'teen age' also. It is considered as the most difficult stage of development.
- Two types of physical changes occur during adolescence: internal and external. Personality of an adolescent develops in a certain way only because of these changes.
- Fickleness ends and the ability to concentration develop and memory power increases. Adolescents move in the world of imagination more and get victim of it. Imagination develops comparatively more within boys rather than girls. Logical power increases and various interests arise.
- From the view point of social development now the interest of adolescent moves towards outer world by neglecting family. He can adopt rigid behavior towards parents but cannot abandon friends. He only see his insult in the advice of parents. He does not compromise with their thinking and do challenge them. From the view of self-respect, in the family or in group wherever he lives want respect for himself.
- The feeling of insecurity worries poor adolescents every time. As a result they became the victim of feeling of enmity.
- At this stage adolescent expects more happiness and pleasure. He like watching cinema, go to hotels, reading or writing story-novel, listning song, acting etc. His most powerful will is to do friendship with opposite sex. He requires money to be self-dependent. Therefore he wants to the self-dependent. Some adolescents are deeply affected by this feeling and it can be seen in their behavior. Adolescents of big cities are more excited towards their objectives.
- Adolescent treat moral and social values as restriction. He has to deal with various values at a single time. Therefore he tries to satisfy all at a single point of time and get problematic in that. Therefore

it is the responsibility of the teachers, parents and society to understand his behavior and respect him.

- The feeling of Hero-worship arises within adolescents. They starts following ideal person. Try to make themselves like their ideal person. Sometimes the effect of this hero-worship can be seen in the form of love.
- With increase in age interests also changes. There are some similar interests of girls and boys and some are different. Boys are more interested in sports, exercise and future occupation but, girls are often interested in music, art, acting, framing activities.
- Important symptom of adolescence is sexual-development. During this period their reproductive parts get the power of reproduction as they got complete development. Sex-feelings get blast during this period.
- To utilize the energy of adolescence, proper structure should be emphasized; this can be helpful in fulfillment of their needs.
- At the stage of adolescence physic develops with a high speed. His height get more increment. It is important to have arrangement for exercise in schools for healthy development of the body.
- Adolescent remains at a situation of psychological conflict. Therefore it is important to provide them moral education. Moral education should be practical rather than theoretical.
- Generally adolescents are worried about their future. It is the responsibility of the school to guide them to choose a right occupation for them.
- Psychologists believe that adolescents are more interest towards studies. In this situation children should be inspired to read the biography of great people and quality novels.
- From the view of participating in the formation of society, social values should be develop within adolescent. Adolescent also includes of group feeling. In schools teachers should emphasize group studies.
- Reason behind various problems of adolescents is tendency of sex. This causes instability in his momentum, behavior, interest etc. scholars believes that there should be arrangements for sex-education for adolescents. An attempt should be made for developing a positive point of view towards sex.
- Adolescents are emotional, sensitive and they are owner of boundless energy. This energy should be properly used. Education should be full of objective and occupational that can guarantee a secure life.

12.7 Keywords

1. **Homosexual**—of the same sex such as woman-woman
2. **Hetrosexual**—of opposite sex such as male-female

12.8 Review Questions

1. Explain in detail the changes in adolescence.
2. What problems are faced by adolescent at the stage of adolescence? Explain
3. Explain the nature of education of adolescent and their guidance.
4. Comment on the Period of storm of adolescence.
5. What should be the role of teacher at the stage of adolescence?

Notes

Answers: Self-Assessment

1. Teen Age
2. Sex
3. 19 Years
4. Opposite

12.9 Further Readings

Books

1. Psychology—*Dr. Saryu Prasad, Agra Book Store, Agra.*
2. Education Psychology—*S.H. Sinha & Rachna Sharma, Atlantic Publication, New Delhi.*
3. Education Psychology—*S.K. Mangal, P.H.I. Learning Private Ltd., New Delhi.*
4. Adhigamkarta Ka Vikas Evam Shikshan Adhigam Parkiriya—*A.K. Verma, Hindi Book Center, New Delhi.*

Notes

Unit-13: Behavioral Problems

CONTENTS

Objectives

Introduction

13.1 Factors which Adversely Affect Behavior of Child

13.2 Measures to keep Good Behavior of Child

13.3 Summary

13.4 Keywords

13.5 Review Questions

13.6 Further Readings

Objectives

After studying this unit, the students will be able to:

- Understand the factors which adversely affect behavior of child.
- Understand the measures to keep good behavior of child.

Introduction

Objective of education is to develop a healthy mind within a healthy body. Mental health of a child can be better through education only. Success of education process depends on healthy mind. As said by Psychiatrist Frandsen, "Mental health and success in learning is very closely related". **—Frandsen**

According to this statement, in an education process it is compulsory that the student and the teacher both must be mentally healthy**.** With an unhealthy mind a student fails to learn and a teacher fails to educate. So it is important to understand the reason for the unhealthy mind and to find the measures to make their minds healthy.

13.1 Factors which Adversely Affect Behavior of Child

Factors which Adversely affect behavior of child there are various factors that adversely affect the behavior of child. Which are:

1. **Effect of Inheritance:** Due to the faulty inheritance various diseases like mental infirmity or nerve related diseases are found in child. Because of it he remains unhealthy.

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Notes Diseases related to inheritance does not affect children necessarily or always.

2. **Effect of Physical Health:** Physical health has deep relation with mental health. Ailing person finds difficulty in adjusting with new conditions.
3. **Effect of Physical Limitation:** Physical limitation occurs due to accidents or diseases etc. Physical limitation develops the inferiority complex in child which creates a problem for him in adjusting with his friends and society.
4. **Family Related Reasons:** following factors related to the family affects the behavior of child.
   - **(a) Family Environment:** The crises amongst the family members adversely affects the child.
   - **(b) Poverty of Family:** Due to the bad economic condition of family, child becomes rigid or enraged. Feeling of insecurity, lack of confidence and inferiority complex developes within him and all these things adversely affect the mental health of child.
   - **(c) Strict Discipline of Family:** If child gets rebuked in little things it creates the feeling of self-complex within him. In this kind of environment the child gets ill.
   - **(d) Biasness of Parents:** If parents like one of the child more than the others due to several reasons, then also the child getting low care adversely affected by this behavior. In this kind of situation they have jealousy for other children of the family. Pugnacious attitude arises in the mind of child and they always try to harm others.
   - **(e) Excess love of Parents:** Some of the parents give extra care or love to their only child or hardly surviving children or due to ealthiness. It also harms children. There is lack of self dependence within them. They are unable to face the difficulties of life. They got excess care; therefore they do not grow independently.
   - **(f) Effects of the high values of Parents:** Parents believe in high moral values and expect their children to behave according to these. Children of the family feel suffocation under the burden of these high moral values. They walk in the world of imagination, by depriving general life and therefore they cannot handle the social problems. There is always a conflict between the values and reality within their mind. As a result nervous system gets affected and nerve related diseases rises within them.
5. **Psychological Reasons:** There are some other reasons of mental illness other than other reasons, which are helpful in arising mental illness, which are called as tension, emotion-gland, anxiety, mental weakness and tiredness. These are described earlier. All these adversely affect the mind of children.
6. **Social Reasons:** Defective organization and environment of society also affects mental health of the child. Mental health of child can't be good in an unorganized society because there is always the involvement of conflicts, crises, various kind of social evils such as stealing, lying, dishonesty etc. in this kind of environment. Children growing in this kind of environment can be the victim of various flaws such as instability, jealousy, enmity, conflict, misbehave etc. cast and communal conflicts of society, distance between the rich and the poor group, feelings of higher and lower, jealousy, enmity, non-cooperation etc. creates strain in the mind of children. This kind of situation and environment of society is harmful for the mental health of child.

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Task Do you agree with the statement that class irregularity (Rich or poor class) and cast irregularity creates the inferiority within children? Comment in its support and against it.

7. **School Related Reasons:** After family, school environment also affects the mental health of the child:
   (a) **School Environment:** If there is excess of regulatory control over child in school, his desires are depressed or he is restricted to participate on subject activities, then his mental health gets disturbed. If there is always fear of discipline in school and classrooms, then the child becomes the victim of mental illness.
   (b) **Defective Syllabus:** If children do not the syllabus according their interest, needs and abilitiesthen they do not take interest in studies and get defeated in exams, this results as mental illness within children. They are always afraid of punishment in case of not learning the subject-matter. These kinds of children get tensed and became the victims of criminal behavior. Often they bunk their classes.
   (c) **Insufficient Teaching-Techniques:** If teacher does not emphasis over personal difference and try to use psychological techniques, then the child have to face difficulties in studies and he became frustrated when he is unable to learn anything.
   (d) **Faulty Examination system:** Today subjective examinations system are in tradition, these are not sufficient to assess the real development and ability of the child. Usually due to the various flaws of examination system, able children do not get promotion in class and by chance due to some reasons students who are not capable get passed in exams. In such circumstances the able students lose their confidence and unable students do not take interest in studies. These kinds of children could not adjust themselves in society.
   (e) **Feeling of Competition:** The feeling of competition which involves the feelings of jealousy, enmity and hate also affects the mental health of children.
   (f) **Effect of the Personality of the Teacher:** If there is instability in the behavior of teacher then he could not properly behave with children. His behavior becomes rigid and bias. If he punish children in little things then the mind of children get unbalanced. In such a situation child became more enraged and rude or always afraid and became the victim of emotion-gland.

13.2 Measures to Keep Good Behavior of Child

Family, school and society have an important role in forming the better mental-health of the child. From this point of view the factors that maintain the mental health or the psychological health of child are following:

(a) **Functions of Family:** Family plays the most importance role in the protection of mental health. Family helps in maintaining mental health in following ways:
   1. **Provide Necessary Facilities for Development:** According to the psychologist, feelings like freedom, self-confidence and responsibility of a mentally fit child develops till the age of 6 years. Family has to provide required opportunities, facilities and environment to the child for the fulfillment of the physical and mental necessities of the child.

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Did u know? In a mentally fit child sense of responsibility develops within the age of 6 years.

2. **Family Environment:** The family environment should be peaceful to maintain the mental health of the child and there should be care and love in hearts of the family members for each other. Child should be motivated to do work of his interest. Mental health of parents should be good.
3. **Behavior of Parents:** Proper behavior of parents towards their children is helpful in development of good mental health of the children. In this relation Kupooswami wrote, "the mother who give love and protection to her children, she contributes in mental development of he children, the father who spends his time and life with his children, he helps in providing a healthy psychological point of view to the children.

(b) Role of School: The process of development of the personality of child begins from family, but it can be successfully achieved in schools by various means. Teachers have the important role in school. He can help in maintaining the mental health and resisting the mental disability of children by emphasizing on following factors. Following things should be kept in mind in schools for the development of mental health:

1. **Good Environment:** School environment affects the physical and mental health very much. There should be arrangement of regular physical education, food, rest, sports, exercise, cleanliness and treatment of diseases in schools.
2. **Caring Behavior of Teachers:** Teacher should have polite, good and kindly behavior towards students. Teacher should behave equally to the students without being bias.
3. **Discipline:** School Discipline should be based on democratic principles, means the policy of fear, punishment and suppression should be avoided. For developing the feeling of self-discipline within children, they should be motivated to perform responsibility oriented tasks.
4. **Balanced and Proper Syllabus:** Syllabus should be according to the age, interest and requirement of the child and it should be flexible. Syllabus should be in such a manner that it can develop all the aspects of personality of children.
5. **Balanced Home-Work:** Students should not be rewarded with too much home work. The burden of home-work makes them always worry about the punishment in not doing it. It affects their mind adversely.
6. **Organizing Syllabus Oriented Activities:** Sports, entertainment, scouting and cultural programs should be organized in school. These kinds of programs avail students to present their inspirations, their wills and basic behavior.
7. **New View Towards the Teaching-Techniques:** Traditional education-techniques should be avoided. Modern psychological techniques should be used, which should be based on the principle of performance, behavior, practice, self-experience and freedom.
8. **Educational Directions:** Students should be help in choosing subjects according their interest and ability.

Self Assessment

Mark the following as true or false:

1. High values of parents create the feeling of inferiority. ☐
2. Mentally unfit children also have extraordinary talent. ☐

Notes

3. Healthy mind develops in healthy body. ☐
4. Burden of excess of home-work creates tension within children. ☐
5. Children have the learning capacity; therefore they are able to learn in any kind of environment. ☐

9. **Personal Directions:** Children have many problems, to which they are unable to solve. Therefore problems can be easily solved with the help of skilled people and psychologist. This kind of directions should be available in school.
10. **Occupational Directions:** An important objective of education is to provide professional skills. The upcoming professional life makes the teenagers worry during their study/learning period. They can be help in choosing right occupation with the means of professional/occupational directions.
11. **Parent-Teacher Meeting:** There is special contribution of family and parents in education of the child. Therefore teachers and parents should concern about the education of children at a regular interval. For this purpose a parent-teacher council should be established.
12. **Arrangement of Religious and Moral Education:** Child should be introduced with religious and moral thoughts at a regular interval for the moral and behavioral development of the child. By this they can accept healthy feelings and good ideas easily.
13. **Formation of Good Habits:** Formation of good habits is important for mental health. Teacher should make efforts to raise the habit of daily life, balanced food and simple living, high thinking.
14. **Take Advice from Mental Health Specialists:** Psychologists should be concerned for the psychological problems of children and their studies in schools and their arrangement should be made properly.

    Records of educational progress and behavior of children should be maintained in schools. Teacher and parents can make efforts for the improvement of mental health of children by observing these records.
15. **Education of Good Citizenship:** Education for being good citizen should be given in schools from initial stage. As the member of the society, for the development of social qualities education of ideal citizenship and being social should be given through various subjects and programs.

Above mentioned factors are the simple measures for maintaining psychological health and resisting mental illness.

13.3 Summary

- Developing a healthy mind in a healthy body is an objective of education. Mental health of the child can be developed only with the help of education.
- As the victim of mental illness both the student and teacher could not succeed in their objective of being educated and educating respectively. Therefore the measures for their mental illness and maintaining their mental health should be concerned.
- There are several factors that affects adversely to the mental health of the child. (1) Effect of family succession, (2) Effect of physical health, (3) Effect of physical deficiency or development, (4) Family related factors, (5) Psychological reasons, (6) Society related reasons, (7) School related reasons.
- Family, school and society have an important role in forming the better mental-health of the child. From this point of view the factors that maintain the mental health or the psychological health of child are (a) Role of Family: (1) Provide necessary facilities for development, (2) Family Environment, (3) Behavior of Parents. (b) Functions of School: 1. Good Environment, 2. Caring/Lovingly Behavior of Teachers, 3. Discipline, 4. Balanced and Proper Syllabus, 5. Balanced Home-Work, 6. Organizing

Notes

Syllabus oriented Activities, 7. New view towards the teaching-techniques, 8. Educational directions, 9. Personal Directions, 10. Occupational Directions, 11. Parent-Teacher Meeting 12. Arrangement of Religious and Moral Education.

13.4 Keywords

1. **Subjective**—Self Depedent.
2. **Democratic Principle**—Based on Equality. Run by the democratic process.

13.5 Review Questions

1. Comment on the factors which adversely affect behavior of child.
2. Describe the measures to keep good behavior of child.

Answers: Self-Assessment

1. True 2. False 3. True 4. True 5. True

13.6 Further Readings

Books

1. Education Psychology—*S.K. Mangal, P.H.I. Learning Private Ltd., New Delhi.*
2. Education Psychology—*S.H. Sinha & Rachna Sharma, Atlantic Publication, New Delhi.*
3. Psychology—*Dr. Saryu Prasad, Agra Book Store, Agra.*
4. Adhigamkarta Ka Vikas Evam Shikshan Adhigam Parkiriya—*A.K. Verma, Hindi Book Center, New Delhi.*

Notes

Unit-14: Attitude

CONTENTS

Objectives

Introduction

14.1 Meaning of Attitudes

14.2 Measurement of Attitudes

14.3 Construction of Attitude Scale

14.4 Method of Summated Ratings

14.5 Other Methods

14.6 Summary

14.7 Keywords

14.8 Review Questions

14.9 Further Readings

Objectives

After studying this unit, the students will be able to—

- Understand the meaning and process of measurement.
- Understanding the Construction process of attitude.
- Understanding the summated ratings and other methods.

Introduction

Attitude is a special type of mental readiness to respond against any person, thing or event. In attitude, a readiness to respond against a thing or event is found in a person on the dimensions of favorableness–un-favorableness. For example, if the attitude of a student is favorable towards art, then his attitude will also be favorable for artists, colors, paintings, museums, etc. In the same way if a student's attitude is unfavorable towards art, then all the different aspects of arts will be insignificant for him and he may express his disliking against it. There are three components in attitude- cognitive component, affective component and behavioral component. The cognitive component comprises of a person's knowledge about attitude object and faith. In affective component, a pleasant and unpleasant emotion is found in the soul of a person against attitude object and in behavioral component a readiness for a favorable or unfavorable response against his attitude object

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is organized in a soul of a person. The primary characteristic of attitude is that it is acquired and it affects the different types of learning in the class.

How to change attitudes in learning situation?

Once the attitude is formed, then it becomes little difficult to bring change in it; because attitude is related to person's necessity, emotion and self-concept. A change in an attitude means a change in person's emotions, necessity and self- concept. Perhaps due to these reasons normally the change in attitude is a difficult task. Still, teachers have to face these situations during teaching process. In these conditions teachers have to make a change in the attitude of the students compulsorily and to replace it with a healthier and education oriented attitude for their development. Especially, sometimes it has been seen that sometimes student's attitude towards education or a particular subject becomes unfavorable due to some reasons. In this condition the student loses interest in education gradually and becomes a problematic student. In these conditions it is necessary and essential for a teacher to have the knowledge of the methods through which he can bring changes in the unfavorable attitude of the students. Some of the methods that will be explained later.

1. The first step for a teacher before starting attitude changing program is to identify the existing attitudes of a student on different issues.
2. As attitude is more related with self-concept and personal identification, so comparatively more change can be brought in the attitude through group processes. Wieder (1954) has confirmed this concept in his study. He has found in his study that when students worked in a group and played a role on different issues then on those issues their attitudes at situations has changed more in comparison when a student gets traditional lecture discussion on those issues. Therefore, in schools the program of change in attitude should include more group processes.
3. Self seen or self experienced events are more effective than book reading or through some unconfirmed listening in the process of change in attitude. A study which was done by Blair, Jones and Simpson in 1962, revealed that when the criminal students were made referees and instructor by the police in a sports competition, then their attitude of hatred and unfaith towards police got changed.
4. During the process of change in attitude program the teachers should present any fact, event, story etc., in such a way which can directly affect the affective component of the student's attitude. Until a new feeling is grown to replace the earlier emotions the change of attitude program cannot become successful.
5. In the change of attitude process, being a specialist, the teacher himself can play an important role. They can make them aware of the lectures by which a change in attitude in an unfavorable direction can be possible. Therefore by advising the students, the teachers can check the attitude of the students towards unfavorable direction and inspire them to change their attitude towards favorable direction.
6. Students easily accept those attitudes which they feel are the results of their own original thinking. Therefore, teachers should organize the attitude changing program in such a clever way that suggestions presented by them should look like the original thinking of students.
7. In schools, in the change of attitude program the teachers should invite the guardians and parents of students because if at home the parents does not get satisfied with the suggestions on the attitude changing program or they protest against it or considered it a null statement, then the objective of change of attitude program will not be completed. It parents and guardians take part in attitude changing program and teachers give suggestions in their presence then the attitude changing program will be more successful.

If the teachers include these above facts in attitude changing program, then they will get more success in the desired direction.

Notes

A Comparative Study of Attention, Interest and Attitude

Attention, interest and attitude are very much related to each other. From the educational angle there have similarities on two points among them. The first point is that all three are mental process and the second point is that all the three have motivational force.

Attention and interest have a deep relation. Our attention goes to those things, person or event in which we are interested and we do not pay attention to the thing, person or event in which we are not interested. This is the reason why Evans has said, "The act of maintaining attention on a particulars problem or situation, is called interest." Therefore, it will not be an exaggeration if we say that attention is a similar form of interest and interest is similar form of attention. Therefore, they are two sides of a same coin. However, there are two differences which are given below—

(*i*) Attention is related with external things but interest can be related with external things as well as with the person itself.

(*ii*) It is not compulsory that a person must be interested in the thing to which he pays attention. Sometimes, due to several reasons, he has to pay attention to the thing or an event in which he is not interested. For instance, some students pay attention to their studies because they are afraid of their guardian or parents not due to their interested. It is clear that in each process of attention, it is not necessary that the process of interest should also be included.

Interest and attitude are also closely related, they both are acquired processes. Similarly, it has been seen that the student have a favorable attitude towards a subject or work in which he is interested and similarly develops a unfavorable attitude towards a subject or work in which he is not interested. Yet there is a difference between the two. Attitude may be favorable or unfavorable but this is not the case in terms of interest. Interest is different in degrees. Student may have less or more interest in some work or event and interest is always positive and cannot be negative. The second difference is that a change in attitude is little difficult, but a change in interest is not so difficult. If appropriate substitute is available, then suddenly the interest of a person can be changed sometimes. The third difference is that attitude has more motivational force as compare to interest and this force is comparatively more stable.

14.1 Meaning of Attitudes

The important part of a complete personality of a person is his attitude. In reality attitude is a psycho social concept which tells nature of the behavior of a person in different social situations. The thoughts and preconceptions of a person towards different people, things, organizations, situations, and ideas, decide the attitude of a person. With the help of attitude of a person it is possible to calculate and estimate about his personality. A special place is given to the attitude in the study of social sciences like psychology, sociology, education. This is the reason why knowledge, comparison and relation of attitude with different science have always been an important and interesting subject for psychologists, sociologists and educationists. For the study of attitude on the one hand there is a need of theoretical analysis while on the other hand a question of its measurement also arises. No doubt there is an importance of the measurement of attitude. In the following chapter various factors on the measurement of attitude are discussed in this chapter.

What is attitude? To answer this question is as difficult as to answer about the personality of a person. It presents the feelings and beliefs of attitudes. It tells about what a person feels or what are his pre-facts on which he believes? The attitude of a person means his perspective due to which he behaves in a specific manner towards things, persons, institutions, situations, and planning sets. In other words, attitude is that tendency of a person's personality which inspire him to take decision about his behaviors

1. The act of maintaining attention on a particular problem or situation, is called interest.

—Evans: Pychology, 1978, p. 178

Notes

towards things, persons, institutions, situation; special kind of planning etc. The attitude is developed through experiences from past and by generalizing them. In the development of attitude of a person the manifest, emotional, inspirational and active parts of his personality are also included. Psychologists have defined attitude in different way.

According to **Thurston and Chave**, "Attitude is a sum of person's tendencies, preconceptions, pre-build derivations and pressures towards any specific incident."

According to **Ramers, Gaze and Rumel**, "Attitude is the emotional tendency to respond positively or negatively with the help of experiences against any psychological thing."

In the words of **Good**, "Attitude is the readiness to respond in a special manner against any situation, person or object."

According to **Thurston**, "Attitude is quantum of positive or negative effect related to a psychological thing."

In the words of **Freeman**, "Attitude is the natural readiness to respond in a special manner against any situation, person or things, which are learnt and has become a specific manner of response."

From the above mentioned definitions, it is clear that there are many differences in the various definitions of attitude but almost all the definitions are seem to be agreed with each other.

1. Attitudes have relation with thing, person, situation, planning etc.
2. Attitude can be positive or it can be negative.
3. Attitude develops through experience. In other words attitude is a natural concept.
4. Mostly, attitude is of a permanent nature, but a change is possible from time to time.
5. In the development of personality, perception or emotional factors have an important role.
6. Attitude is personal it means a change in attitude may be possible about some psychological thing.
7. A difference may occur in an attitude of particulars person for various things or persons.
8. Attitude may be (for some group) general or particulars (for a person or thing)
9. Attitude attracts positively the behavior of a person.
10. Attitude has relation with different type of behavior of a person.

Difference between Attitude and Other similar Concepts

Some words like motivation, aptitude, interest, values, belief are used unknowingly by some persons these are used synonymously but in actual attitude have totally different meaning. Therefore it will be better to differentiate between these words.

Attitude and Motivation

Although both attitude and motivation are the factors which affect behavior of a person, yet there is a lot of difference in both words. Attitude is more stable in nature then motivation. Origin of motivation depends up on time while attitude remains constant for a long time only in some special circumstances. When there is some deficiency motivation takes place and when the deficiency ends or the necessity is fulfilled the motivation ends. On the other hand attitude is based on self-experiences and in the absence or presence of deficiency it is not affected. Relation of motivation is more with active part attitude relates more with knowledge and emotional part. There is priority to achieve the goal in motivation, while in attitude a priority of thoughts is there to collect the experiences and work according to them. The area of attitude is wide than compare to motivation. There may be many motivations behind building attitudes.

Attitude and Value

Both the words attitude and value represents mental factors of a person with other persons, things or situations, but is a difference between both the words. Attitude is intimate, while value is objective. In other words we can say that in determination of attitude an importance of self ambition is there, while in fixing value the importance is given more to related things or person. Attitude is a process of responding tendency about something or person. When attitude takes place as a goal, then it transforms in value. In this way attitude is the base of value.

Attitude and Belief

Attitude and belief both the words denote about the mental status of some person, thing or situation, but both the words have prospered different meanings. Belief in actual is a stable and expressed form of attitude. To launch in real attitude is very difficult task. Generally, person expresses his attitudes in the form of his beliefs.

Attitude and Interest

Attitude and interest both are aspects of the personality of human being, yet these both words have difference. Attitude may be in both senses positive or negative, while interest is only positive. In other words attitude indicates both the directions of reacting of a person- favorable- unfavorable, sadness- happiness, and acceptance- no acceptance, while interest indicates in only one direction. In interest person shows his interest only about that thing, which he likes, which gives him luxury, which is favorable for him, or which is beneficial for him. A person able to make his attitude positive by heaving an interest in a particulars thing, person or situations, so it is clear that attitude is vast than interest.

Attitude and Aptitude

Attitude and aptitude both have adequate differences with each other. Attitude is a specific type of angle which indicates on the basis of experiences the thoughts of a person about a particular thing, person or situation. On the opposite side aptitude is that mental ability of a person which indicates the possibility of a success of a person in a particulars field. Attitude is always earned while aptitude indicates about the ability of a person from birth, environment, education and training and a result of interest process which indicates a heavy success in a particulars field of a person. It is clear that attitude is a part of the personality of a person while aptitude is a special kind of mental ability.

Task Differentiates between attitude and interest.

Attitude and Trait

Attitude and Trait are also different. Trait is a explanatory word which represents the features of a personality, while attitude shows the tendency of behavior a person. Attitude may be positive or negative, but it will not be reasonable to classify the traits. Traits are more generalized than attitude, which normally is of a specific nature.

Notes

14.2 Measurement of Attitudes

No doubt, attitude has a very important and significant place in social science. This is the reason why psychologists, educationists, administrators, sociologists have been trying to measure attitudes. It has always been always very difficult to measure attitude due to its intimate nature, yet different efforts from time to time have been made by the psychologists. It is clear from the observation of history that efforts of evaluation of attitudes are comparatively novel. Approximately six decades back the techniques to evaluate attitude in a specific manner could be developed. Earlier unsophisticated techniques like observation and interviews were used to measure the attitude. In 1927 Thurston rendered the law of Comparative Judgment. This law paved the way to measure attitudes in a systematic way and many psychological scaling methods were developed on the basis of this law which are used to measure attitude even today. Using his law of Comparative judgment, Thurston also developed method of Paired Comparative judgment in 1927. After two years, In 1929 Mr. Thurston introduced the method of equal appearing interval with the help of Chave. In 1932, Likert developed the method of Summative Ratings. Today the methods presented by Thurston and Chave (Methods of Equal Appearing Interval) and Likert (Method of Summative Ratings) are mostly used and accepted as a precious contribution in the field of attitude measurement. In 1937, Safer introduced a method which was developed by Thurston but not published, in the form of method of Successive Interval. In 1945 Gutman developed a Scalogram method to measure attitude. In 1948 Edwards and Kilpatrick developed the method of Scale Discrimination to measure attitude. In 1957 Ausgud introduced the Semantic Differential method. In 1934, Ramors introduced a method of measuring attitude of different things of a same category which is known as Master or Generalized type scale. Besides this, other scientists also made many efforts to measure attitude. It is clear that for the last sixty years there has been ample development in the field of measurement of attitude and in the modern era there are many methods available to measure attitude of things, person, situations etc. There are following three main methods of measuring attitude—

(*i*) Method of Direct Questioning

(*ii*) Method of Direct Observation

(*iii*) Scaling Method

In the first two methods, the attitude is measured through the behavior of daily routine of a person therefore these two are called Behavioral Techniques or Direct Method. It is clear that in these techniques, the attitude is known by directly asking questions or by directly observing the behavior of a person. These methods are very easy, but have their own limitations. The third method of measuring attitude is called psychological technique or indirect method. In this method, the attitude of a person is measured through scaling on the psychological continuum. Scaling has different methods. In the following chapter the behavioral methods are explained in brief but psychological methods are explained in detail.

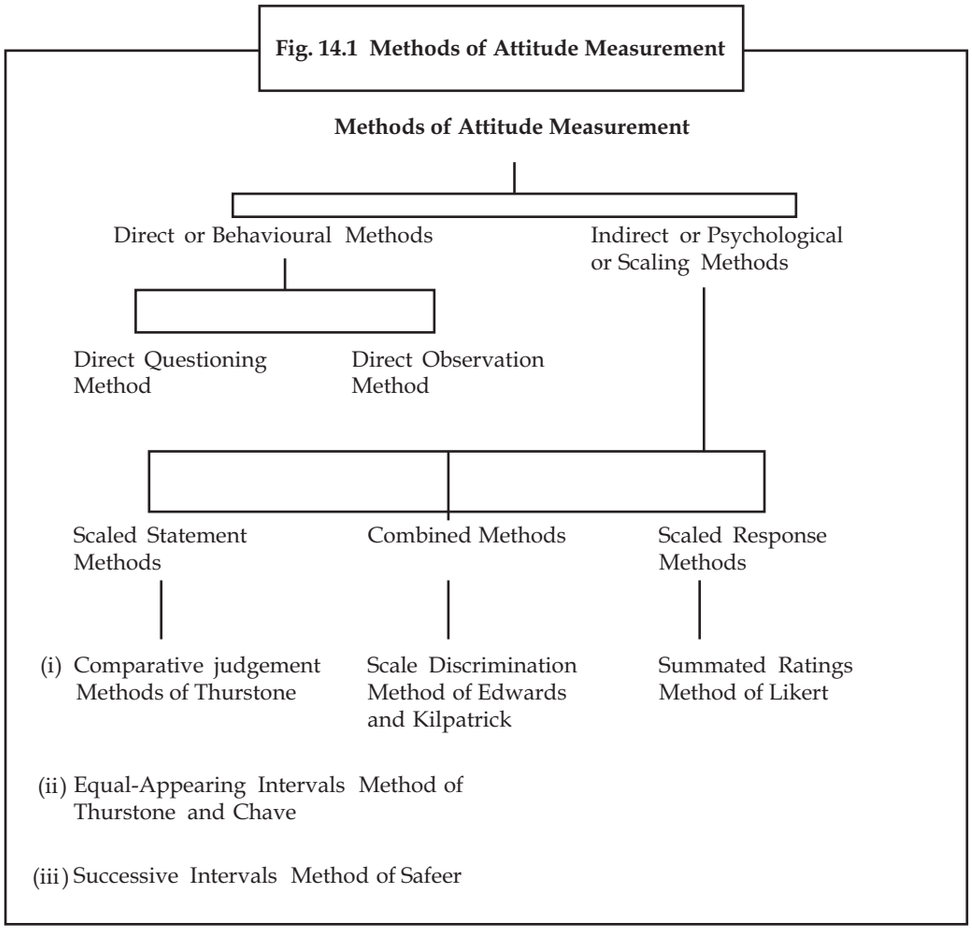
Method of Direct Questioning

Direct Questions are asked in this method to a person to know his attitude about anything or person. On the basis of his answers, the information about his attitude is collected. The logical conception of this method is that if we want to know the opinions of others on any object or person, the best way is to ask questions. Direct questioning is actually very satisfying for the fulfillment of some objectives. By applying this method it is possible to categorize people in three categories on the basis of their attitude, (i) those who have favorable attitude, (ii) those who have unfavorable attitude and (iii) those who say that they are not able to form any clear opinion about attitudes. For example, if you are asked in a national survey about your attitude towards reservation for backward classes recommended by Mandal Commission? So it means that the interviewer is trying to categorize you in one of the three above mentioned categories with the help of Direct Questioning Method. If you show your acceptance

Notes

or liking for the reservation then you will be categorized in the category of favorable attitude, if you show your dissatisfaction or disliking for reservation then you will be in the category of unfavorable attitude and if you are hesitating in giving your opinions or if your opinions are vague then you will be included in the indefinite category of attitude about reservation.

Fig. 14.1 Methods of Attitude Measurement



Direct Questioning Method is not a scientific method to know about attitude. Although attitude of maximum number of person can be known in a short period of time through this method, this method is very easy and even an untrained person can also use this method successfully, yet there are some limitations also. First, a number of people hesitate to express their opinions, feelings or attitudes publicly, and are not interested to express their feelings due to social discrimination and pressure. The correct measurement of attitude can only be possible with this method when social environment is free from several kind of pressures and a person is ready to share his opinions in a right manner, for example there are several such people, who have a positive attitude towards sati pratha, dowry system and untouchability, but due to social fear and desirability they protest against these practices, but in actual, they behave in favor of these practices. In relation to these practices if people are asked for their opinions through secret voting, then probably the traditional followers will vote in favor, while these types of people will either be indefinite or will vote against these practices. It is clear that in Direct Questioning method a person can hesitate in giving his actual opinion due to different social reasons and this is the reason why the results received from these methods are less reliable.

Notes

The second drawback of Direct Questioning method is its reliability. Sometime a person is confused about his opinions and they are unknown about reality of thing or people, and in a momentary excitement, they show their opinions which are different from their actual attitude. In many studies ample difference has been found between the shown attitude of a person and the actual attitude.

Method of Direct Observation

In the Direct Observation Method the attitude of a person is known through the observation of his behavior. According to this method the attitude of a person can be known through his daily behavior about anything, person or organization. According to this method also the attitude of a person can be categorized in three categories-favorable attitude, unfavorable attitude and indefinite attitude. As the person who is being observed does not know that he is being observed and he shows his actual behavior, Direct Observation Method is more appropriate than Direct Questioning Method. For example, if a person does not accept a meal prepared by scheduled caste person, does not take part in his social functions or does not respect him and does not allow him to enter his house, then it can be concluded that person has an unfavorable attitude for schedule caste.

Undoubtedly the Direct Observation Method is more appropriate than Direct Questioning Method, but it also has many limitations. First, observation of many people is difficult and also needs extra time. For example, if we want to know about the attitude of people of whole India towards presidential system then it will not only be difficult but next to impossible to measure their attitude through Direct Observation method. Second, a person generally hides his actual but undesirable behaviors due to some social reasons. For example, an alcoholic secretly drink daily, but always oppose alcoholism. On the other hand a person actually having a negative attitude for alcoholism becomes helpless to social demand to arrange drinks for a party in his house. On the same way a person having negative attitude about films can go to see a film in the pressure of his friends and a person having positive attitude for dowry talks against dowry system due to social pressures and legal restrictions. So it is clear that this is not compulsory that there should be a relation between direct behavior and real attitude. It is clear from above study that the results from Direct Questioning and Direct Observation Method are less reliable and legal, so the psychologists have discovered some more reliable attitude measurement methods. These methods also include measurement methods, which will be discussed in detail ahead.

Scaling Methods

Due to some deficiency in results in measuring attitude through Direct Questioning and Direct Observation Methods, the Scaling Method came into existence, and as a result, many methods of preparing attitude scale were developed and the practice of measuring attitude became more logical. For the measurement of physical factors, the physical continuum is used, which arranges the things in a systematic order according to their quantities of qualities. As in the case of measuring weight, things are categorized according to their weight on the continuum of 0 kg, 1 kg, 2 kg, 3 kg … for measuring the Length things are categorized according to their length on the continuum of 0 cm, 1 cm, 2 cm … and for the measurement of temperature things are categorized according to their temperature on the continuum of 0°C, 1°C, 2°C. In the same way things or person can be graded on the psychological continuum through their responses or judgments. For example, some Psychological Continuums are presented as follows:

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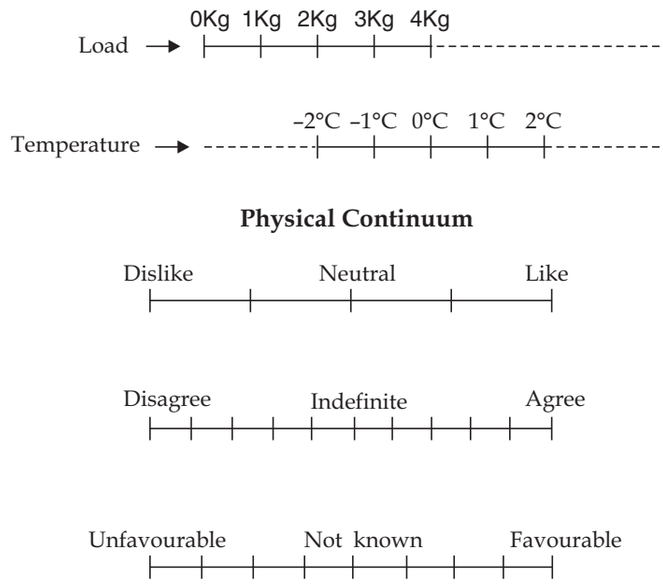
Fig. 142.2 Psychological Continuum



It is clear that all the possible values and positions are available in an organized sequence for psychological trait in psychological continuum. Normally psychological continuum is expressed through a straight line of which both the ends indicate minimum and maximum values of related psychological trait or two opposites poles of a trait. Psychological trait which is convertible into continuum is definitely of a continuous nature, it means that in between two points or measures based on continuum, no matter how near they are to each other, a third point or measure is possible, theoretically. Sometimes, practically some limited points or measures are imagines on psychological continuum, but theoretically it is totally continuous. When a psychological continuum is divided in numerical units so that it can be use to scale psychological traits of some person or thing, then it is called psychological scale. In other words psychological scale is actually a division of psychological continuum in numerical units, which is used to measure a specific trait. The methods to prepare this type of scale are called psychological scaling procedures. Therefore scaling means arranging psychological stimuli on the numerical scale or continuum. In the scaling method, numerical values of different Stimuli which are also called scale values are known and they are organized in the form of scale of continuum on the basis of scale values. Only psychological continuums are used in preparing measuring scales for attitude. This is the reason why these measuring methods are also addressed by the name of psychological methods.

Scaling methods can be divided in two parts on the basis of their nature—(*i*) Scaled statement methods and (*ii*) scaled response methods. In both the methods for scaling attitude some statements are used. These statements express some things about anything, person or place, of which the attitude is to be scaled. The attitude is scaled on the basis of response given on these statements by the person. In scaled statement method the statements are scaled on the psychological continuum of attitude with the help of experts, and it is assumed that different statements denote attitude in different values. Some examples of scaled statements are given in Table 22.1. With the observation of these statements, the idea of scaled statements will be clear. On the opposite of scaled statement method, in the scaled response methods, the responses given on different statements are scaled on psychological continuum. It is assumed in this method that through all the statements included in attitude scale represent attitude of the same values,

Notes

but the intensity of different responses on different statements may differ. Some example of attitude statements about scaled responses is given in Table 14.2. We hope that the readers will understand the difference between scaled statement and scaled response by understanding the scaling response method.

Table 14.2

Some Statements with Scaled Responses

Sl.No.	Statements	Response Option				
		Fully disagreed	Some disagreed	Indefinite	Some agreed	Fully agreed
1.	National integrity develops through inter-cast marriage.					
2.	Many problems occurs through inter-cast marriage.					
3.	Inter-cast marriages are the result of free sex.					
4.	All the progressive people should do inter-cast marriage.					
5.	Inter-cast marriage affects the social system.					

Table 14.2

Some Scaled Statements

Responses from Attitude.		Statements	Response
Maximum Negative.	1.	Maximum Inter-Cast Marriages are unsuccessful.	Yes/No
More Negative.	2.	Person/Ladies of Lower Cast only are interested in Inter-Cast Marriage.	Yes/No
Less Negative.	3.	Getting Inter Cast-Marriage, respect gets shorten in the society.	Yes/No
Approximately Zero.	4.	There is no such redundant pomposity in Inter Cast- Marriage.	Yes/No
Less Positive.	5.	Inter Cast- Marriage is a progressive step.	Yes/No
More Positive	6.	Inter-Cast Marriages are helpful to remove Racial Narrows.	Yes/No
Maximum Positive.	7.	I do want my son/daughter to get Inter Cast- Marriage.	Yes/No
More Positive.	8.	There is more co-ordination in husband and wife in Inter Cast Marriage.	Yes/No
Less Positive.	9.	Selection of more able husband and wife is possible in Inter- Cast Marriage.	Yes/No
Maximum Negative.	10.	Inter -Cast Marriages are normally a result of Free Sex.	Yes/No
Less Positive.	11.	Eradication of dowry system is possible in Inter-Cast Marriage.	Yes/No
Less Positive.	12.	Inter-Cast Marriage gives growth to emotional integrity.	Yes/No
Maximum Negative.	13.	Inter -Cast Marriage creates disorder in the society.	Yes/No
Total Positive.	14.	Educated person should get Inter-Cast Marriage.	Yes/No

Notes

Attitude Scales

In the present, usually attitude scales are used to measure attitude. Attitude scale , is actually an measurement instrument which is prepared by following any one of scaled methods to scale attitude, by applying this the quantities of the attitudes can be measured. A formal collection of attitude statements is called attitude scale. The exercisable express their response on the statements of attitude scale, their response is converted in a numerical form by scoring them with points and this point indicates the quantity of Attitude. As discussed earlier, that scaled methods can be divided into two parts. In scaled statement method, the statements represent attitudes in different quantity, while in scaled response method the intensity of response statements differs. By using and discussing both these methods different, psychologists and psychometrics created attitude scales. Comparative judgment method of Thurston, equal appearing intervals methods of Thurston and Chave, and successive interval method of Safer are mainly most useable scaled statements methods. In these methods, different techniques are used for measuring the attitudes by the scale values of the statements. The summated rating method of Likert is the most popular in scaled response methods. In this method many options (commonly 5 or more) are presented about the response given by the people on the statements. These options indicate attitude in different quantities. Attitude scales can be prepared through above mentioned methods for scaling attitude for different things.

A majority of available attitude scales available at this time are prepared through equal-appearing interval method or summated rating method (Likert method).

Did u know? In present time for the easiness of preparing attitude scale normally summated rating method (Likert method) and to measure attitude with less statements equal appearing interval methods (Thurston and Chave) are used.

14.3 Construction of Attitude Scale

Attitudes and their Measuring Methods have already been discussed. No doubt knowledge about Attitude and their measurement have an important place in traditional sciences like Education Science, Psychology and Social Science. To measure attitude, usually attitude scales are used. Here we are describing some main and mostly usable methods in preparing of Attitude Scales. We hope the readers will be able to get the knowledge and skill of some different methods of preparing attitude scale and will be able to prepare attitude scale.

Steps of Attitude Scale Construction

Because Attitude Scale is a collection of statements, therefore like any other scaled psychological experiment, in attitude scale also, very carefully prepared, edited and selected statements are included. Four main steps are followed in the preparation of any scalable attitude scale like other scalable instruments: (*i*) planning for Attitude Scale, (*ii*) prepare Attitude statements, (*iii*) selection of attitude statements, and (*iv*) evaluate attitude scale. According to the first step, planning for Scale Attitude, the suffix is defined very clearly, the nature of scale, time duration of administration, number of statements included and methods of selection of statements are decided. In the second step of preparing scale, attitude statements are prepared. Statements which can correctly express the Attitude which is to be scaled are prepared for measuring scales. The person, preparing scale, can prepare some statements himself, while for preparing the rest statements he can take help from the published editorials, articles in the newspapers, articles published in related magazines, subject matter of books, consult an expert and can also have a conversation with them and also talk to the common people. Hints can also be taken

Notes

for preparing attitude statements, from conscious and experts on the related subject, and also they can be asked for a speech or write about their opinions, views and feelings.

> *Notes* The language used in preparing statements for scaling attitude should be easy and there should not be any ambiguity. The statement should differentiate between the person having positive and negative attitude.

Attitude at the time of the creation of the following statements must be noted—

(*i*) Attitude statement must have a relation with present situations, not with past.

(*ii*) In Attitude statements the factual statements should not be included.

(*iii*) Those statements should not be made which have more than one meaning or have any confusion at all.

(*iv*) Only those statements should be made which have a relation with psychological object.

(*v*) When there is possibility of manifestation of same opinion from almost everyone, such statements should not be made.

(*vi*) Those statements should be made in which the desired thing or person can take the entire range of Attitude within itself.

(*vii*) The language of statements should be clear, easy and direct as possible and the also the meaning of such words should be definite.

(*viii*) The statements should be as short as possible. The scale-maker should make effort to make sentences within 15 to 20 words.

(*ix*) One complete idea should be used in every statement.

(*x*) Words like every time, always, all, nobody, never creates ambiguity. So these words should not be used.

(*xi*) While writing statements words like only, never, sometimes should be used with precautions.

(*xii*) The expressions should be in simple sentence instead of compound or complex sentence.

(*xiii*) The words should not be used in statements which are not known by the readers and students on which attitude scale is to be applied.

(*xiv*) Avoid from double-negation statements.

After the involvement of probable statements in the attitude scale, pre-tryout is done to remove the ambiguity and confusion from the language of statements. In the process of pre-tryout the statements are read by some people, and after understanding the problems, confusion or unclearness faced by them, corrections are made. Now the third but the most important aspect of construction of Scaling starts. In this step, of all the probable statements, the most appropriate are included in the final draft. As the quality of scale depends on the quality of statements so this step is termed as the most important step. Many techniques are invented by the psychologists to select the statements. As it is discussed earlier, the process of scaling of attitude is divided into two categories— **Scaled Statement Methods** and **Scaled Response Methods**. Both of these methods are two different approaches have been measured statements or responses. Primarily in Scaled Statement Methods, the Thurston's Method of Paired Comparison, Thurston's and Chave's Method of Equal Appearing Intervals, Sufeer's Method of Successive Intervals are included. The Likert Method of Summated Ratings is highly prevailed in Scaled Response Methods. In addition, Guttman Method of Cumulative Scale which is also known as Scalogram Method and Edwards and Kilpatrick's Scale Discrimination Methods are also popular. After selecting the appropriate statements the selected expressions are organized in the form of measurement. Then the general

guidelines and the way to react is finalized by the ruler ruler and set the desired number of copies are made.

After the preparation of last draft of the Scale, the last grade of scaling means the evaluation of scale comes. in this step the reliability, validity, and measures are found for the scale. The reliability of attitude measuring scale can be known through test-retest methods, simultaneous method (if the second similar grade is prepared) from one of them or by using many methods. The coefficient of 80 or more than 80 is normally considered as a reliable Attitude Measuring. Legal subject matter, legal concurrent or legal construe method can be determined for Scale. For a measurement of Attitude normally centi norms, Z categorized norms, T categorized norms, stanines, one of them or more appropriate norms can be prepared. The last work of manufacturer of scale is to prepare manual of attitude measuring scale. All the information is included in manufacturing of scale given in manual. The people interested in using these scales can get the related inquiry about making of scale with the help of the manual.

Method of Paired Comparisons

Paired Comparison Method in actual is to know the scale values of statements by revaluating them on psychological continuum. That's why this is included in under the re-measuring sentence methods of attitude measurement. Paired comparisons methods are based upon the law of comparative judgment given by Thurston. In the decade of 1920, Thurston published many articles about attitude measuring scales. The law of comparative judgments provides a base to arrange the stimuli on psychological continuum. The law of comparative judgment helps to measure subjective experiences and any given Stimuli characteristics which may be different from everyone but in indefinite quantity. The main problem in psychological rescaling is if Stimuli can be arranged on the basis of their related qualities on psychological continuum. Here one thing is clear that a psychological continuum for some stimuli cannot be used for other stimuli. By these methods only different stimuli of a set of Stimuli given can be arranged on psychological continuum on the basis of their different qualities.

According to the law of Comparative judgment, a modal discriminal process is possible on the Psychological Continuum of given any Stimuli. The discriminal process means the response or decision given by a person regarding some quality on some Stimuli,, because different people react differently on some particular Stimuli. Therefore it is important to make some assumption about these discriminal processes. Thurston has said that the distribution of discriminal reactions given by many people on stimuli can be considered as Normal Probability Curve. The medians and deviation of norms given by different persons on Stimuli or a sentence can be subsequently described as Scale Value and Discriminal Dispersion. It is clear that the values of different Stimuli's or statements will be different in scale value and discriminal dispersion.

For example, we that there are two statements related to some psychological thing, i.e., *i* and *j*. A big group of people was asked to compare, which one is more favorable: *i* or *j*. Members of the group were not permitted to describe them equally favorable. If half of the group (p = .50) says *i* is more favorable than *j* and rest half says (Q = .50) *j* is more favorable, then we can say that i and j both represents that quality equally which was being measured because according to Model Discriminal Process the value of both are same.

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Table 14.3

Simplified Version of NPC to Convert p-Matrix into Z-Matrix

p	*.00*	*.01*	*.02*	*.03*	*.04*	*.05*	*.06*	*.07*	*.08*	*.09*
.0	–	–2.33	–2.05	–1.88	–1.75	–1.65	–1.56	–1.48	–1.41	–1.34
.1	–1.28	–1.23	–1.18	–1.13	–1.08	–1.04	–.99	–.95	–.92	–.88
.2	–.84	–.81	–.77	–.74	–.71	–.67	–.66	–.61	–.58	–.55
.3	–.52	–.50	–.47	–.44	–.41	–.39	–.36	–.33	–.31	–.28
.4	–.25	–.23	–.20	–.18	–.15	–.13	–.10	–.08	–.05	–.03
.5	00	.03	.05	.08	.10	.13	.15	.18	.20	.23
.6	.25	.28	.31	.33	.36	.39	.41	.44	.47	.50
.7	.52	.55	.58	.61	.64	.67	.71	.74	.77	.81
.8	.84	.88	.92	.95	.99	1.04	1.08	1.13	1.18	1.23
.9	1.28	1.34	1.41	1.48	1.56	1.65	1.75	1.88	2.05	2.33

Note: The first column and row of the table are presented the values of *p*, while the body relative to the *z* values are given on *p*.

On the contrary, if more than half members of the group say that ($p > .50$) statement *i* is more favorable than statement *j*, then it can be said that the modal dicriminal process of *i* is greater than *j*. On the Psychological Continuum from minimum to maximum, in the same way if more than half people say that ($p < .50$) sentence *i* is less favorable than *j*, then it can be said Model Discriminal Process of *i* is less than *j*. So it is clear that the state of Model Discriminal Process of statements *i* and statement *j* on the Psychological Continuum is based on the ratio of comparative results. So it clear that frequency of people telling that statement *i* is more favorable than *j*, can be judged after receiving the comparative results from the group of people. If f_{ij}, is the frequency of the (number) the people telling *i* is more favorable than *j*, then the ratio can be obtained by dividing it with the total number of persons, *N*.

$$f_{ij} = \text{statement } i > \text{statement } j$$

Then

$$p_{ij} = \frac{f_{ij}}{N}$$

Where statement p_{ij} is the ratio of the people telling that *i* is more favorable than *j* because the total of the people liking *i* than *j*, (f_{ij}) and persons liking *j*, (f_{ji}) will be equal to *N*. therefore,

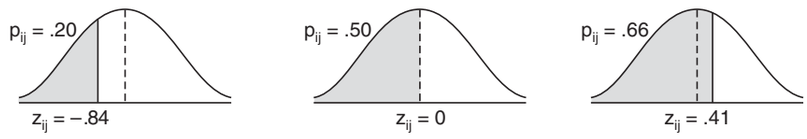
$$f_{ji} = N - f_{ij}$$

And $p_{ji} = 1 - p_{ij}$

With the help of Normal Curve Table, the value of p_{ij} can be converted into *Z*. A easy form of the Normal Curve Table is presented in the table to convert the different values of *p* into *Z*. It is clear by the observation of the simple Normal Curve Table that if the value of p_{ij} is subsequently .20, .50, and .66 then the values of *Z* will be –.84, 0 and +.41. The relation of the ratio of p_{ij} and the value of Normal Curve Distribution, $Z_{ij,}$ is shown in following figure.

Notes

Fig. 14.3



On the basis of some assumptions Thurston proved that any value of Z_{ij} can be determined similar to the differences between the scale values of statement *i* and statement *j*. This sub law of Thurston can be said the case *V* of The Law of Comparative Judgment. Therefore, if the scale values of statement *i* and statement *j* are represented by S_i and S_j then

$$Z_{ij} = S_i - S_j$$

If we do a comparative judgment of pair of many statements and above mentioned equation are made for every pair then by using the Least Square Method of the mathematics, the Scale Values can be known about different statements.

Table 14.4 F-Matrix

Statement	*1*	*2*	*3*	–	–	*n*
1	f_{11}	f_{21}	f_{31}	–	–	f_{n1}
2	f_{12}	f_{22}	f_{32}	–	–	f_{n2}
3	f_{13}	f_{23}	f_{33}	–	–	f_{n3}
–	–	–	–	–	–	–
–	–	–	–	–	–	–
n	f_{1n}	f_{2n}	f_{3n}	–	–	f_{nn}

Table 14.5: P-Matrix

Statement	*1*	*2*	*3*	–	–	*n*
1	p_{11}	p_{21}	p_{31}	–	–	p_{n1}
2	p_{12}	p_{22}	p_{32}	–	–	p_{n2}
3	p_{13}	p_{23}	p_{33}	–	–	p_{n3}
–	–	–	–	–	–	–
–		–	–	–	–	–
n	p_{1n}	p_{2n}	p_3n	–	–	p_{nn}

Notes

Table 14.6: Z-Matrix

	1	*2*	*3*	–	–	*n*
1	Z_{11}	Z_{21}	Z_{31}	–	–	Z_{n1}
2	Z_{12}	Z_{22}	Z_{32}	–	–	Z_{n2}
3	Z_{13}	Z_{23}	Z_{33}	–	–	Z_{n3}
–	–	–	–	–	–	–
–	–	–	–	–	–	–
n	Z_{1n}	Z_{2n}	Z_{3n}	–	–	Z_{nn}
Total	$\sum Z_{1i}$	$\sum Z_{2i}$	$\sum Z_{3i}$	–	–	$\sum Z_{ni}$
Middle	$Z_1 = \frac{\sum Z_{1i}}{n}$	$Z_2 = \frac{\sum Z_{2i}}{n}$	$Z_3 = \frac{\sum Z_{3i}}{n}$	–	–	$Z_n = \frac{\sum Z_{ni}}{n}$

It is clear that to know the Scale Value of statements by the method of paired comparisons, statements are presented to the people in the form of pair and they are asked by which pair of statements they are more agreed. In other words, a person has to give a Comparative Judgment about given couple statement. If the number of statements is N then the total couples will be $N(N-1)/2$. On the basis of responses, first a Frequency Matrix is made which is also called F-Matrix. F Matrix presents the Frequency of the people who like different statements in comparison to the total statements. This frequency denotes that how many people like the statements which are given in columns more than statements given in row. Therefore entry f_{23} means the people who like statement 2 as compare to statement 3. Clearly f_{ij} statement indicates the number of persons who likes statement i more than statement j. If the total number of people is N then all the frequencies of a Matrix divided by N can be converted into Proportion Matrix of p-Matrix. After then with the help of normal curve table (NPC) the values of Z of proportional to P values, a Z Matrix is prepared. To change P Matrix into Z Matrix a very simple form of NPC is given in Table 22.3. For the convenience of readers, a draft of F, P and Z matrix is given subsequently in Table 22.4, 22.5, and 22.6.

With the help of Z-Matrix the Scale Value of different statements is calculated. The different values of Z given in first column of Z matrix can be written according to the equation of Scale Values described earlier.

$$Z_{11} = S_1 - S_1$$
$$Z_{12} = S_1 - S_2$$
$$Z_{13} = S_1 - S_3$$
$$- - - - -$$
$$- - - - -$$
$$Z_{1n} = S_1 - S_n$$

By adding both sides of equation given above

$$\sum Z_{1i} = n\,S_1 - \sum S_i$$

Dividing both sides by n

$$\frac{\sum Z_{1i}}{n} = S_1 - \frac{\sum S_i}{n}$$

Notes

Where $\sum Z_{1i}/n$ is the median of all Z values given in first column of Z matrix, which can be written as Z_i and $\sum S_i/n$, is the Median of all statement measured, which can be written as S. In other words,

$$Z_1 = S_1 - S$$

Normally this equation can be written in this form

$$Z_i = S_i - S$$

Where Z_i = Medians of Z values of the i column of Z matrix.

S_i = the scale value of statement i

S = the Median of the scale values of all statements.

It is clear from the given equation that the Medians of Z given in the columns of Z Matrix express the deviation taken from the medians for the scale values of statements. Clearly the total of all scale values will be equal to zero which can be used as a check for the precision in calculation. The statements of having negative values will be less favorable from normal statements and the statements having positive values will be more favorable than normal statements. As the center point of Scale Value which is taken as a Median for every statement on the psychological continuum, is arbitrary, therefore any constant can be added in it to make the scale values positive. Addition of the constant does not make any change in the scale value of different statements. Normally for the convenience all the Scale Values are converted in positive values by adding a constant equal to a maximum number of negative values. By doing this, the statement having a maximum negative value, changes to Zero and all the other scale values are converted in positive values.

While deriving the scale value of statements, sometimes, all people like only one statement from the two statements of a pair. Then the value of ratio P is denoted approximately one or zero, and as a result, we get the highest value of Z (positive or negative). In this situation the use of Z value is not appropriate for deriving the median Z, because the very high positive and negative values of Z, increase or decrease the values of median Z unnecessarily. Therefore the value(s) of Z in Z matrix are higher than ± 2.00, then it is reasonable to calculate median Z by considering them equal to + 2.00 or –2.00.

After knowing the scale value of different statements, Attitude Scale is prepared by keeping all the statements in a random order. The scale prepared in this way is presented before the people whose attitude is to be scaled. They are asked to tell that from which of those statements they agree and from which they disagree. It is clear that their responses will reflect the Attitude of the person about those things, for which the statements are prepared, and scale values are derived. It is expected from the person having more positive attitude, that he will be agree with the statement having more scale value, while from the person heaving less Attitude, it is expected, that he will agree with the statement, having less scale value. Therefore to get the Attitude score of a person can be known on the basis of scale values of agreed statements. A median is normally used for this purpose. In other words, if a person agrees with three statements with scale values 2.5, 2.8 and 3.1, then his attitude score will be the median of the three, which comes as 2.8. In the same way if a person shows his acceptance about four statements like .78, .95, .97 and 1.02, then his attitude score will be the median of these four, say .96.

For the convenience of the readers, an example is presented here for preparing F Matrix, P Matrix and Z Matrix. For example Let us assume that, total eight statements are prepared for attitude scale and their scale value is to be known by arranging them on psychological continuum through method of paired comparisons. It is clear that total 28 couple or 28 pairs will be prepared. For example, we assumed that these pair of statements are given to 150 person (N = 150) and they were asked to choose the statement from each pair, which they like most. It was found that the total of two attitudes, received from any pair will always be equal to N (means 150) these frequencies can be written in the form of F-Matrix according to Table-22.7.

Notes

Table 14.7: F-Matrix for the Attitude Scale (N = 150)

Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	75	123	65	140	100	115	138	83
2	27	75	53	133	88	110	119	55
3	85	97	75	118	78	122	100	115
4	10	17	32	75	108	105	145	75
5	50	62	72	42	75	99	87	66
6	35	40	28	45	51	75	128	90
7	12	31	50	5	63	22	75	48
8	67	95	35	75	84	60	102	75

The figures in Table 22.7 show that out of 150 people how many like column statements more than the row statements. $N/2$ or 75 is placed at the hypotenuse; the ratio of frequencies can be obtained by dividing every frequency by N or 150 which are presented in table 22.8.

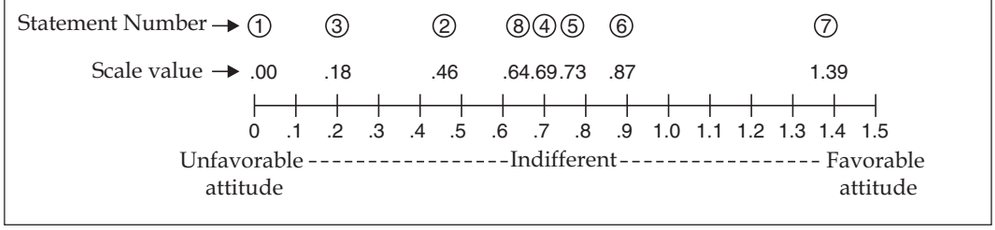
Table 14.8: Table 14.7 p-Matrix for the F-Matrix given in Table 14.7

Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	.50	.82	.43	.93	.67	.77	.92	.55
2	.18	.50	.35	.89	.59	.73	.79	.37
3	.57	.65	.50	.79	.52	.81	.67	.77
4	.07	.11	.21	.50	.72	.70	.97	.50
5	.33	.41	.48	.28	.50	.66	.58	.44
6	.23	.27	.19	.30	.34	.50	.83	.60
7	.08	.21	.33	.03	.42	.17	.50	.32
8	.45	.63	.23	.50	.56	.40	.68	.50

Z Matrix can be prepared by converting the entire p values given in p matrix, in Z values, with the help of normal curve table. The medians of Z values in the different columns of Z matrix are obtained (by assuming the values more than +2.00 and less than –2.00 equal to +2.00 and –2.00) and are presented by adding them in a new row in the matrix. Now all the major median Z values are made positive by adding the maximum negative value, i.e., .62 in them. The values obtained are the scale values of different statements. Scale values are shown in the last row of Z Matrix by adding a new row. These scale values of different statements denote psychological continuum of attitude. In the above table (22.8) a Z matrix table, prepared through P matrix is shown. It is clear from the observation of Table (22.9) that the order of statements is 1, 3, 2, 8, 4, 5, 6, and 7 on the psychological continuum, where statement 1 denotes the minimum attitude and statement 7 denotes maximum attitude. The Scale Value of these statements on psychological continuum are shown in the following figure.(22.4)

Notes

Fig.14.4



Position of different statements on the Psychological Continuum

Table 14.9 Z-Matrix for p-matrix given in Table 14.8

Statement	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	.00	+92	–18	+1.48	+.44	+.74	+1.41	+.13
2	–.92	.00	–.39	+1.23	+.23	+.61	+.81	–.33
3	+.18	+.39	.00	+.81	+.05	+.88	+.44	+.74
4	–1.48	1.23	–.81	.00	+.58	+.52	+1.88	.00
5	–.44	–.23	–.05	–.58	.00	+.41	+.20	–.15
6	–.74	–.61	–.88	–.52	–.41	.00	+.95	+.25
7	–1.41	–.81	–.44	–1.88	–.20	–.95	.00	–.47
8	–.13	+.33	–.74	.00	–.15	–.25	+.47	.00
$\sum z$	–4.94	–1.24	–3.49	.54	.84	1.96	6.16	.17
Mean z	–.62	–.16	–.44	.07	.11	.25	.77	.02
Scale value S = Mean z + .62	.00	.46	.18	.69	.73	.87	1.39	.64

It is clear from the above table that following steps are taken for preparing attitude scale through method of paired comparison—

(*i*) Prepare attitude statements and compose them.

(*ii*) Arrange attitude statements in pairs, if the total number of statement are n, then n (n– 1/2) will be the pair.

(*iii*) Present pairs of attitude statement to a group of people, and know that which statement of the pair is more favorable to him, as compared to the other.

(*iv*) Prepare F matrix with the help of reactions given by the people on the pairs of statements.

(*v*) Get the value of p, by dividing all the f values of F matrix by n, and prepare the p matrix.

(*vi*) Convert p matrix in Z matrix with the help of normal curve table.

(*vii*) Get the median of Z values given in the columns of Z matrix, While obtaining the median if the value of z is more than ±2, then it should be considered as ±2.00.

(*viii*) After obtaining the scale value, prepare an attitude scale by arranging the statements in a random order.

Notes

(*ix*) Apply the attitude scales on those people, whose attitude is to be scaled and to obtain their agreements and disagreements on different statements.

(*x*) Know the median of scale values of all the agreed statements, which will be an attitude score for that person.

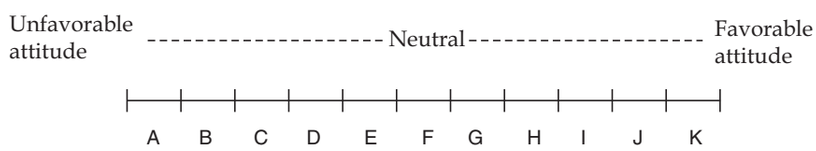
(*xi*) To know the reliability, legality and norms.

Method of Equal-Appearing Intervals

Similar to the method of paired comparisons, scale values are known in a same manner in the equal-appearing method by re-scaling the statements on psychological continuum. Therefore equal appearing method is also included in the group of scaled statements methods of Attitude scaling. To know the scale value by rescaling the statements through couple Comparative method is advantageous only when the number of rescaling statements is less. In the method of paired comparisons all the possible pairs are prepared, and people are asked for a comparative judgment on all the pairs. If the number of statements is n then every person has to give $(n\ (n - 1)/2)$ numbers of comparative judgments. For twenty statements, 190 , for twenty five statements, 300 , for thirty statements, 435 , for forty statements 780 , for fifty statements 1225 and for sixty statements 1770 comparative judgments are needed. It is clear that if the number of statements is more, then to present the statements in couples and to receive judgments, there is a lot of wastage of time, money and energy. Normally, the availability of people is not possible to give their judgments, on different pair of statements. Not only, it takes more time to give judgments on high number of statements, but it also takes more time to calculate and know the scale value in F matrix, P matrix and Z matrix, and also the chances for error increase. Keeping these problems of method of paired comparison, in 1929, Equal-Appearing Interval method was formulated by Thurston and Chave. Opposite to the method of paired comparison, in Equal-Appearing Interval Method, every person has to give only one decision for every statement. Due to the simplicity and easiness of Equal-Appearing Interval Method, it is broadly used to know the scale value, when the number of statements is high. Although Equal-Appearing Interval method was described by Thurston and Chave at very first time, yet, in the history of psychological research and scaling, it is popularly known as Thurston method for measuring attitude, and the scale prepared through this method is called Thurston scale.

In Equal Appearing Interval Method, for statements related to some person, thing or process, efforts are made with the help of experts to divide the statements on the basis of limit of attitude expression, in 11 categories. These 11 categories are located almost at the same intervals on psychological continuum. This psychological continuum is shown in Figure 14.5.

Fig.14.5



Psychological Continuum Used in Equal-Appearing Intervals

It is clear that the statements expressing maximum adverse attitude will be placed in category A, and the statements expressing maximum favorable attitude, will be placed in category K, neutral and unresponsive statements will be placed in category F. As the categories move forward from F, to K, the expressed quantity of favorable attitude in statements increase, and when the categories move backwards from F to A direction, the expressed quantity of unfavorable attitude in statements

Notes

increases. Thurston and Chave used Cards for dividing the statements in 11 categories. Every statement was written on a separate card, and the experts/judges were asked to arrange these cards from *A* to *K*, in 11 groups on the basis of quantity of attitude expressed by the statements. This is to be very clearly understood that experts/judges have not to express the quantity of their own Attitude, but they have to categorize the cards according to the limits of attitudes reflected through statement. The investigators, scale manufactures, and psychologists have used different methods from time to time in the past to know the judgments of experts/ judges. Some used printed statements and gave 11 columns in front of it, and the judges/experts have to give their opinion by ticking a right sign on one of them. Some have presented either eleven alphabets from A to K or number from 1-11 in front of the statements, and experts/judges have to give their judgment by marking a circle on one of them. Some have presented a eleven inches long straight line which represents psychological continuum from favorable to unfavorable, and experts/judges have to give their judgment by ticking a sign of right on an appropriate place. The judgment on the statements is known by Experts/Judges, through these different methods or any other method and the statements are categorized in eleven parts subsequently. Although Thurston and Chave tried three hundred judges for these types of judgments, but later on this was experienced that reliable scale value can also be achieved even with a less number of experts. These days scale values are known normally on the basis of judgment of thirty to fifty experts.

Thurston and Chave believed that a same interval is found in the quantity of attitude expressed by the attitude statements divided in eleven piles and the statements of these piles are given marks from one to eleven. It is clear that cards of *A* pile will be marked 1, cards of *B* pile will be marked 2, cards of *C* pile will be marked 3... and cards up to *K* piles will be marked up to eleven. In other words on the psychological continuum on which the experts have divided the statements in eleven piles, there are eleven Scale determination points. Thus both the ends of eleven point prescription scale express the favorable attitude and unfavorable attitude. The average value can be obtained for every statement, on the basis of marks given by the experts on the statements, which will be a scale value of a statement on the eleven point psychological continuum. Thurston and Chave used the median as an average value. Therefore, in this way the scale value of a statement will be the median of points given on eleven point scale, by experts/judges.

To method to know the scale value of a statement through Equal Appearing Interval Method, will be clarified with an example given ahead, but a very important question should be considered before it. Some judges/experts may be careless or negligent due to their disliking while dividing the statements in 11 categories on psychological continuum. Besides sometimes they also make mistake in understanding the instructions, and sometimes experts arrange the statements according to their own agreement or disagreements instead of the statement's limit of expressing the attitude. In this situation it will be compulsory to separate the incorrect judgments at the time of obtaining scale values. Thurston and Chave gave 130 statements to the experts, to categorize in eleven categories and they rejected the judgments of those who had selected 30 or more than 30 statements in a category, by saying their judgments were given unconsciously. In this way they did not included the judgments of 41 experts out of 341 experts for knowing scale values of the statements. Therefore, the judgments of those experts who put more than 25% statements in a category can be rejected on the basis that the experts have not done their work carefully and their judgments should not be included in the process of obtaining scale values of the statements.

In Equal-Appearing Interval Method Scale normally more statements are prepared, in the beginning and the appropriate statements which are selected on the basis of judgments given by experts are included and the final form of attitude scale is prepared by them. The medians and fourth deviation *Q* is calculated by these judgments given by the experts. Median indicates scale value of different statements while fourth Deviation *Q* tells about the difference between judgments of experts. It is clear that the statements should be considered more clear and appropriate in which the deviation is less or we can say experts are more agreed on them. When the uniformity is more on judgments then the deviation *Q* is less. The excess value of Deviation *Q* denotes more difference of opinion in the judgment of different experts which is certainly ambiguous. Thurston and Chave accepted that the fourth deviation *Q* denoted that statement is ambiguous. Due to the different explanations on a particular statement by judges, the experts give different judgments about the expressed attitude statement, and as a result the value of *Q* increases. Therefore, only those statements should be included in the last draft of the attitude on which the experts have uniformity on their scale values means the deviation *Q* is less.

Notes

Normally very less number of statements is included in the final form of attitude scale prepared by Equal-Appearing Interval Method. Normally a final form of Attitude Scale is prepared from 20 to 25 statements. While selecting the statements, the scale value *S* and fourth deviation *Q* is considered. The statements are selected in this way that the scale values *S* are distributed at relatively equally space on the psychological continuums, and the fourth deviation value, *Q*, is comparatively less. If we have to select only one statement among the statements with equal values then statement who has less fourth deviation is selected , because that is considered least ambiguous.

After selecting a few statements out of many statements on the basis of scale Value and deviation, the selected statements are arranged in a random order and are presented to those people whose attitude is to be scaled. People have to express their agreements and disagreements with those statements. The person who shows his agreement with the statements, the attitude score is known with the help of scale value of those statements, which presents the position of attitude of that person on the psychological continuum. To know the attitude score, the median is calculated. In other words the person who agrees with the statements, the median of scale value of the statements will be the attitude score. For instance, if a person shows his agreement with five statements, the scale value of those five is subsequently: 4.6, 7.5, 6.3, 5.2 and 3.7, then by using median method the attitude score will be 5.2. By using Median his attitude score will be the median of these five scales i.e., 5.46. After preparing the last draft of the scale, its reliability and legality is known. It has become like a tradition in Equal -Appearing Interval Method that two parallel drafts of attitude scale should be prepared and by representing them on a big scale, their parallel draft reliability should be calculated. Any other appropriate method can also be used to know the legality and norms.

For the convenience of the readers the method for calculating median, scale value and fourth deviation on the basis of judgments of experts about Attitude statements, is demonstrated with the help of an example. For example, six statements are prepared to know the attitude scale in the beginning, which were given to fifteen experts with an instruction that they arrange them in an order of favorableness and unfavorablness on the 11 points on Psychological Continuum to express the attitude. The judgments given by experts are presented in Table 22.10 and for the convenience to know the median and fourth deviation, the judgments of experts are denoted in 1, 2, 3……9, 10, 11 instead of A, B, C…J, K and the value of median and deviation *Q* will automatically be clarified by the numerical study.

Table 14.10 Experts Opinion and Scale Values for the Statements

Expert	*Statement*					
	I	*II*	*III*	*IV*	*V*	*VI*
1	7	5	9	5	4	8
2	9	6	6	4	7	11
3	7	6	6	3	8	9
4	8	2	8	5	3	11
5	9	6	7	2	7	10
6	6	3	9	3	4	11
7	8	5	7	1	8	9
8	8	6	10	3	5	11
9	8	5	2	3	6	11
10	6	5	7	5	3	7
11	8	4	10	1	3	11
12	7	6	10	6	8	8
13	8	5	8	6	8	11
14	8	4	10	3	9	8
15	10	7	9	7	3	9
Md	8	5	9	3	6	10
Q	0.5	1.0	1.5	1.0	2.5	1.5

Notes

Normally, the number of experts /judges is high (50 or above) to know the scale value of the statement in Equal Appearing Interval Method. For this reason it is difficult and uneasy to know the value of median and fourth deviation by preparing the table. In this situation the judgments given by experts on a statement are arranged in different frequencies and with the help of frequency distribution, the medians and fourth deviations are known. An example for this type of frequency distribution is given in Table 22.11.

Table14.11

Frequency distribution for determining the Scale Values by Equal Appearing Intervals Method (N = 20)

Statement		Categories on the psychological continuum											Scale Value S	Ctur-thank devia-tion Q
		A 1	***B*** 2	***C*** 3	***D*** 4	***E*** 5	***F*** 6	***G*** 7	***H*** 8	***I*** 9	***J*** 10	***K*** 11		
I	*f*	0	0	0	0	22	28	45	40	37	20	8	7.63	1.20
	cf	0	0	0	0	22	50	95	135	172	192	200		
II	*f*	4	17	19	35	47	23	25	12	9	9	0	5.03	1.46
	cf	4	21	40	75	122	145	170	182	191	200	200		
III	*f*	0	0	0	0	0	8	27	35	62	38	30	8.96	1.02
	cf	0	0	0	0	0	8	35	70	132	170	200		
IV	*f*	35	46	53	30	25	11	0	0	0	0	0	2.86	1.10
	cf	35	81	134	164	189	200	200	200	200	200	200		

According to the description of table, the frequencies (f) and cumulative frequency (cf) are obtained by arranging the judgments of the experts on every statement. After that scale value (S) and fourth deviation Q are obtained by applying formulas. To know scale value S(median) following formula is used:

$$\text{Scale Value, } S = L + \left(\frac{\frac{N}{2} - cf_b}{f}\right)$$

Where L = is the lower limit of that category in which $N/2$th cumulative frequency is situated. Clearly, the value of L will be obtained by subtracting 5 from the prescribed numbers.

N = is the total number of frequencies. Clearly this will be the total number of judges.

cf = is the cumulative frequency of the series of $N/2$ Cumulative Frequency.

F = is the frequency of $N/2$th cumulative frequency series.

Scale value of Statement 1, $S_1 = 7.5 + \frac{100 - 95}{40} = 7.63$

Scale value of statement 2, $S_2 = 4.5 + \frac{100 - 75}{47} = 5.03$

Notes

Scale value of statement 3, $S_3 = 8.5 + \frac{100 - 70}{62} = 8.98$

Scale value of statement 4, $S_4 = 2.5 + \frac{100 - 81}{53} = 2.86$

To know the value of fourth Deviation Q, Q_1 and Q_2 are calculated first for every statement. For calculating Q_1 following method is applied:

$$Q_1 = L + \frac{\frac{N}{4} - cf_b}{f}$$

Where L = is the least limit of the series where $N/4$th Frequency is situated.

cf_b = is the cumulative frequency of the series which is just below the $N/4$th cumulative frequency series.

$f = N/4$ is the cumulative frequency of $N/4^{th}$ cumulative Frequency.

For calculation of Q_3 following method is applied

$$Q_3 = L + \frac{\frac{3N}{4} - cf_b}{f}$$

Where L = is the lowest limit of that series in which $3N/4$ cumulative frequency is situated.

cf_b = is the Cumulative Frequency of the series which is just below of the $3N/4$th cumulative frequency series.

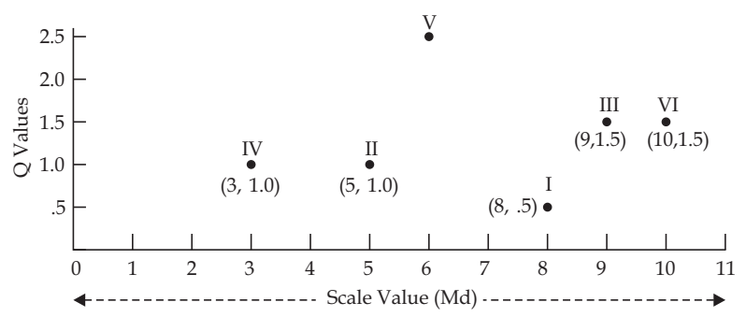
f = is the cumulative frequency of the $3N/4$th cumulative frequency series.

After knowing Q_1 and Q_3, Q is calculated through this formula.

$$Q = \frac{Q_3 - Q_1}{2}$$

For above mentioned four statements, the values of Q , subsequently 1.20, 1.46, 1.02 and 1.10 are obtained. In this way, scale values S and Q are known for all the statements. For statements, the values of S and Q can also be known with the help of graph and monographs. The scale value of different statements expresses psychological continuum. Scale values and fourth deviation of mentioned statements of Table 14.11 are shown in Figure 14.6.

Fig. 14.6 Position of different Statements on the Psychological Continuum



After knowing the Scale Value and calculating the value of Q, a final dorm of scale is prepared by selecting some statements, considering both the values in mind. After that the reliability and legality of Scale is obtained.

It is clear from the above discussion that preparing attitude scale by Equal-Appearing Method, following steps are followed—

Notes

(*i*) Normally, preparing and composing 50 or more than 50 attitude statements.

(*ii*) Arranging the attitude statements in a sequence from unfavorable to favorable on the eleven-point psychological continuum by experts.

(*iii*) Converting the judgments given by experts in numbers, and calculating the median and fourth deviation for every statement. The medians of received scores given by the experts will be called scale value of statement.

(*iv*) By considering median and fourth deviation, scale values should be selected in such a way for attitude scale that the scale values of selected statements should be distributed on the entire Continuum in an equal interval and the fourth deviation should be less as possible.

(*v*) Preparing the final draft of the attitude scale by arranging the selected statements in a random order.

(*vi*) Applying the attitude scale on those people whose attitude is to be scaled, and to indicate favorable and unfavorable views on the statements from them.

(*vii*) Obtaining the medians or mean values of scale values of the person who have agreed on the statements. That mean value or median will be the score value of the attitude of that person.

(*viii*) To know the reliability and legality of the attitude scale and evaluate their norms.

14.4 Method of Summated Ratings

Unlike the Method of Paired comparisons and Equal Appearing **Interval Methods**, the scale values of the statements are not obtained on the basis of Psychological Continuum in Summated Rating Method, while it is assumed, that every statement indicates about attitude in a same manner, and the people have to give their scaled response on the statements. Therefore, Likert introduced Method of Summated Ratings in 1932 and it is also known as Likert's Method of preparing Scale Attitude and the scale is called Likert's Scale. For every statement to scale attitude in Likert's Method five responses, strongly agree, agree, undecided, disagree, strongly disagree, are presented. A person has to reflect his quantity of attitude about the statement by choosing any one of the five responses. In the beginning, Likert evaluated the Z value of (Frequencies), the number of person who selected all the five responses categories for a statement, by Normal Curve Transformation Method, and these Z values were accepted as a scale value for all the different response categories. The process of knowing Z value will be clarified in Table 22.12. Likert came to know that different scale Values will be received for all the five response categories of different statements. This process was very difficult, and to know Total Attitude Score of a person with the help of these scale values was a very difficult task.

But later Likert found that by giving the scale values of 4, 3, 2, 1 and 0 to all the five responses categories above mentioned, there was a full positive relation (more than .99) between the attitude scores obtained in this way and attitude scores obtained by the scale values obtained by the normal curve transformation. It is clear from the pre-described table that for the first, the scale values for different responses categories are 0, 1, 2, 2, and 3, and for the second statement, scale value are gradually 0, 1, 2, 3 and 4, which is near to category 0, 1, 2, 3 and 4. This is the reason why that Sigma Scoring Method was relinquished as a difficult method, and the simple method of 0, 1, 2, 3 and 4 came into existence. Now strongly agreed, agreed, undecided, disagreed and strongly disagreed responses are given the numbers 0, 1, 2, 3 and 4, respectively. The Total Attitude Score of a person, on the attitude scale prepared by Likert, is the total of the marks received on all the statements, because a person has to determine his responses on different statements, and the attitude score is expressed on the basis of total rating. Therefore **Bird** called this method of preparing attitude scale as Method of Summative Rating. This method of preparing attitude scale developed by Likert is more known as Method of Summative Rating in present. To prepare attitude scale by the Method of Summative Rating a big number of attitude statements are prepared first. Along with the pre-available statements on attitude scales, we can take a help from the articles published in newspapers, magazines, suggestions of experts and personal meetings.

Notes

Self- Assessment

Tick (✓) or (×) in front of given statement:

1. Once Attitude is formed, then it is difficult to change it. ☐
2. Students are very much impressed by the attitude of a teacher. ☐
3. Interest and Attitude are related with each other. ☐
4. Attitude impresses the behavior of a person in a positive way. ☐

Table 14.12

(Scale Values by NPC Transformation) (N = 200)

State-ment	***Response Category***		***Strongly Agree***	***Agree***	***Indefinite***	***Dis-agree***	***Strongly Disagree***
I	Frequency	*f*	16	56	40	60	28
	Frequency ratio	*p*	.08	.28	.20	.30	.14
	Cumulative frequency ratio	*cp*	.08	.36	.56	.86	1.0
	Cumulative proportion of mid-point	*mcp*	.04	20	.46	.71	.93
	Z (NPC) Table		–1.75	–.84	–.10	.55	–1.48
	Z + 1.75 To Create Positive		0	.91	1.65	2.30	3.23
	Closest Point Scale Value		0	1	2	2	3
II	Frequency	*f*	24	68	40	60	8
	Frequency ratio	*p*	.12	.34	.20	.30	.04
	Cumulative frequency ratio	*cp*	.12	.46	.66	.96	1.0
	Cumulative proportion of mid-point	*mcp*	.06	.28	.56	.81	.98
	Z (NPC) Table		–1.56	–.58	–.15	.88	2.05
	Z + 1.75 To Create Positive			.98	1.71	2.44	3.61
	Closest point scale value		0	1	2	2	4

Notes

Important—To know mid-point cumulative ratio (*p*), the half of the series frequency ratio is added in the cumulative frequency ratio (*cp*) of the series below it.

Some statements are prepared negative and some positive. After the preparation of statements they are carefully published and the difficulties and vagueness of the language are removed. Pre-tryout method can also be used. From very well composed statements, some appropriate statements are selected. The method of selecting statement is different in Likert method from Thurston. According to Thurston Method, the statements were divided in different categories on the psychological continuum, and inappropriate statements were selected on the basis of scale value and fourth deviation. While in Summative Rating Method, by using the Post **Analysis Technique**, the discriminating power of statements is known, and on the basis of decimating power, the statements were selected. The statements having less discriminating power were rejected and the statements with more decimating power were accepted, considering them as appropriate statements for the survey. It is clear that scale values of the statements are pre-determined in Summative Rating Method, therefore, there is no question of obtaining their values. To know the discrimination power of the statements normally T test is used, and the statements having significant T values are considered as discriminating statements and which statements with significant T values are rejected. To select the statements prepared on the basis of discrimination power, first those statements are applied on a big sample of the people for whom the Attitude Scale is being prepared, and a total attitude score is obtained for the sample of every person. In the process of obtaining the score values, the responses are numbered as 0, 1, 2, 3, and 4 Positiveness and Negativeness is also considered while giving marks. When a statement is positive, 4 marks are given for a strongly agreed response, and for agreed response, 3 marks are given, for indefinite 2, for disagree 1, and for strongly disagree 0 is given. When the statement is negative, this order of giving marks/numbers is reversed, means for strongly agreed 0 is given, for agreed 1 is given, for indefinite 2 is given, for disagreed 3 is given and for strongly disagreed 4 is given. Here one more thing should also be understood that some scale manufactures also use numbers like 1, 2, 3, 4, 5 for grading different responses on statements in to Likert's Method. Actually both the processes 0, 1, 2, 3, 4, and 1, 2, 3, 4, 5 give the same information, only the place of mode or middle point is different, because Likert used 0, 1, 2, 3, 4 process therefore we have used this method in this book. For the last few years, some experts have also started using less than 5 or more than 5 responses categories for preparing attitude Scale in Likert method. For example, three point scale (0, 1, and 2) and seven point scale (0, 1, 2, 3, 4, 5, and 6) are also very popular methods. It is clear the number 1 and number 3 indicate the neutral and median stage on psychological continuum.

After calculating the responses given on different statements by the person and by adding them, attitude score mark is received, which is mentioned on the response sheet of that person. After receiving the **total** attitude marks from response sheet of the different people of a sample, they are ordered in an increasing order. In this sequence the response sheets having more than 27% marks are placed in high attitude group while less than 27% are placed in low attitude group. It can be assumed that these two groups are criterion groups for the evaluation of attitude statements, and the people getting more marks/numbers like 4 or 3 for a good statement should be placed in high attitude group, while the persons getting less marks/numbers like (0 or 1) should be placed in low attitude group. In other words any good statement should be discriminating. According to this assumption, *t* number of tests is done to evaluate the statements. For the test the Median (M_H) and deviation value (σ_H) of the marks scored by the high attitude group is obtained for every statement. Similarly M_L and σ_L received from the people of low attitude group is obtained. If there are n_H people in high group and n_L in lower group, then the ratio value can be calculated by the following formula:

Notes

$$t = \frac{M_H - M_L}{\sqrt{\frac{\sigma^2_H}{n_H} = \frac{\sigma^2_L}{n_L}}}$$

Where M_H= Median of marks received on statements of high group.

M_L = Median of marks received on statements of low group.

σ_H = Deviation of marks received on statements of high group.

σ_L = Deviation of marks received on statements of low group.

n_H = Number of people in high group.

n_L = Number of people in low group.

If an equal percentage is used to separate high and low group, as is done above, then $n_H = n_L$, this can also be written as only n. This is clear that n denotes the number of people in high or low Group, then the above formula can be written as follows—

$$t = \frac{M_H - M_L}{\frac{\sqrt{\sigma^2_H + \sigma^2_L}}{n}}$$

For the convenience of the readers, the process of calculating the t values for different statements in Likert Method will be clear from the following example. **For example**, suppose some statements were applied on 60 people and after knowing the attitude score, high and low groups were prepared on the basis of 27%, it is clear that both groups will have 16 people, then to know the median and deviation Value, following formula can be used—

$$M = \frac{\sum X}{n}$$

and

$$\sigma = \sqrt{\frac{\sum X^2}{n} - M^2}$$

A calculation of median value and deviation value for high and low attitude groups is presented in Table 22.13, while in Table 22.14 T value is obtained after comparing high and low groups for different statements. A decision can be made to include the statements in the final form of scale on the basis of significance of T values.

Notes

Table 14.13

Means and S.Ds for different Statements

High Aptitude Group (n_H = 16)						Low Aptitude Group (n_L = 16)					
Person	Statement Number					Person	Statement Number				+
	I	II	III	IV	K		I	II	III	IV	K
1	3	4	3	4	4	1	2	4	2	3	1
2	4	3	4	3	2	2	1	2	2	2	3
3	3	2	3	2	4	3	0	2	1	4	0
4	4	4	4	2	3	4	1	1	3	3	0
5	4	3	4	2	4	5	2	4	0	2	0
6	2	4	4	2	4	6	0	2	2	2	2
7	4	2	4	4	3	7	2	1	0	2	2
8	2	0	4	0	4	8	0	2	2	3	0
9	1	2	4	3	3	9	0	4	1	0	1
10	4	2	2	4	4	10	0	1	1	2	1
11	3	4	4	1	4	11	1	1	0	2	0
12	0	3	3	4	3	12	4	1	2	1	1
13	4	3	4	1	3	13	1	2	1	1	1
14	4	2	4	3	3	14	1	1	0	1	0
15	3	4	4	3	2	15	3	1	1	1	0
16	2	1	3	3	3	16	2	0	1	1	0
M	2.94	2.29	3.63	2.56	3.25	M	1.25	1.81	1.19	1.88	75
S.D.	1.24	1.20	0.62	1.21	0.68	S.D.	1.81	1.22	1.91	1.02	0.93

Notes

14.14

t Values for different Statements

Statement Number	High Group (n_H = 16)		Low Group (n_L = 16)		*t*	Significance level	Comment
	M	*S.D.*	*M*	*S.D.*			
I	2.95	1.24	.125	1.18	3.95	0.01	Selected
II	2.96	1.20	1.81	1.22	2.06	0.05	?
III	3.63	0.62	1.19	0.91	8.86	0.01	Selected
IV	2.56	1.21	1.88	1.02	1.72	NS	Cancelled
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
K	3.25	0.68	0.75	0.93	8.68	0.01	Selected

When the number of people is high in high and low categories groups, then it is easy to prepare frequency distribution for evaluating the values of median and deviations. For this, frequencies of the people who received 4, 3, 2, 1, and 0 marks on every statement are calculated separately for both groups. After that according to Table 14.15, calculation is done. The following formula is used for calculation:

Table 14.15

Comparision of Means for Different statements by Frequency Distribution

Statement	High Group (*n* = 108)						Low Group (*n* = 108)						*t*	Level	Decision
	X	*f*	*fx*	fx^2	M_H	σ_H	*X*	*f*	*fx*	fx^2	M_L	σ_L			
	4	25	100	400			4	19	76	304					Selected
	3	40	120	360			3	20	60	180					
I	2	27	54	108	2.68	1.00	2	30	60	120	2.09	1.23	3.87	.01	
	1	15	15	15			1	30	30	30					
	0	1	0	0			0	9	0	0					Selected
	4	45	180	720			4	4	16	64					
	3	31	93	279			3	8	24	72					

Notes

II	2 1 0	20 9 3	40 9 0	80 9 0	2.98	1.09	2 1 0	28 35 23	76 35 0	152 35 0	1.40	1.02	10.99	.01	
III	4 3 2 1 0	42 31 20 15 0	186 93 40 15 0	672 279 80 15 0	2.93	1.06	4 3 2 1 0	18 16 25 40 9	72 48 50 40 0	288 144 100 40 0	1.94	1.24	6.31	.01	Selected

$$M = \frac{\sum f X}{n}$$

and

$$\sigma = \sqrt{\frac{\sum f X^2}{n} - M^2}$$

The *T* values, received from above mentioned method show that how much a statement is successful in discriminating high and low group. If *t* is significant then the statement can be considered as discriminatory statement. For the significance of T, the significance level of .05 or .01 can be selected. One tailed test is being used here, so if the value of *n* is high, then value of t can be considered significant on the level of 0.5, if it is higher than 1.65 and on the level of 0.1 levels if it is more than 2.33. If the value of n is less, then to see the significance of *t*, the table of *t* values has to references. In Table 22.16, for different (dfs) on the levels of .05 and .01, *t* values are presented. In the comparison between two different groups the values of df in *t* test is ($n_H + n_L - 2$). Normally the statements having significant difference on .01 levels are selected in scale, and insignificant statements are rejected. Statements on the significance level of .05 are considered less significant, and are included in scale only in the case of dire need.

Table14.16

Table values of *t* for one tailed test

df	**Significance level**	
	.05	**.01**
10	1.81	2.76
20	1.72	2.53
30	1.70	2.46
40	1.68	2.42
50	1.68	2.40
60	1.67	2.39

Notes

70	1.67	2.38
80	1.66	2.38
90	1.66	2.37
100	1-66	2.36
200	1.65	2.35
300	1.65	2.34
400	1.65	2.34
500 Or more	1.65	2.33

In this way on the basis of received T values of different statements, the discrimination power is known, and the statements having significant discrimination power can be included in attitude scale, while statements having insignificant discriminating power were assumed inappropriate, thus rejected. While preparing attitude scale through summative rating method, normally 30 to 40 such statements are selected, which are capable to discriminate in high and low groups. Therefore statements having more T value are selected to be included in the scale. For this, statements having significant T value are arranged according to their T values, and 30 to 40 statements with high T value are separated. (The quantity of selecting statements depends upon the scale manufacturer's choice). It should also be kept in mind while selecting the statements that some should be positive and some negative. Normally, approximately half positive and half negative statements are selected. By separating both types of statements, the possibility of response set of the people while giving their responses on attitude scale get minimum. If only positive or negative statements are included in Scale, then there is a possibility of response tendency. To know the discriminatory values of statement, any other method of post analysis method can also be applied. At last by finalizing the statements in a random order, the final form of attitude scale is ready, and it can be applied on the people, whom attitude is to be scaled. The people have to give their response on statements of Scale, like strongly agreed, agreed, indefinite, disagreed and strongly disagree, by selecting any one of the five categories. The responses, on given statements by people, are given marks with the help of marking method like 4, 3, 2, 1 and 0, (if the statements are negative then 0, 1, 2, 3, and 4.) The total of all the marks received on statements, will indicate the total attitude of a person. After preparing the final draft of the scale, the reliability and legality is known through testing-retesting or semi-separation method. The legality of subject matter and concurrent legality can also be known. To explain the marks received on the scale they can be converted into standardized marks. For this, T-scores percentiles can be used. Scale manufacture can prepare a conversion table to convert the received marks into scored Marks on the scale.

It is clear from the above description that preparing attitude scale through Summative Rating methods, following steps are followed—

(*i*) Prepare and compose at least 50 or more attitude statements.

(*ii*) Present and apply the scale on a big sample of those people, for whom attitude scale is being prepared, in which every person have to express his response like strongly agreed, agreed, indefinite, disagree, strongly disagree by selecting any one, from five responses.

(*iii*) Give marks through marking 4, 3, 2, 1, and 0 (if the statement is positive) or 0, 1, 2, 3, and 4 (if the statement is negative) and know the attitude score, on the given responses by people.

(*iv*) Arrange the response sheets in a sequence on the basis of total score and separate them in high group or low group according to 27% discrimination method.

(*v*) Calculate the medians and deviation value of marks secured from people of high groups on different statements.

Notes

(*vi*) Calculate the medians and deviation value of marks secured from people of low group on different statements.

(*vii*) Calculate value of T- ratio, for comparing the medians of high and low groups for every statement.

(*viii*) Arrange significant T value statements, in a sequence on the basis of T values and select 30-40 statement with more T value.

(*ix*) Prepare a final form of attitude scale by arranging the selected statements in a random order.

(*x*) Apply the attitude scale on people and to know their total attitude score by evaluating statements through above described method.

(*xi*) Apply attitude scale of people and know the reliability and legal coefficient.

(*xii*) Prepare a conversion table to convert attitude scores in T scores or percentiles.

Merits of Likert Method in Comparison of Thurston Method

Although Thurston method of preparing attitude scale was the first successful effort in the field of attitude scaling, but the method introduced by Likert is considered more useful for its easiness. It takes a very less time and effort to prepare attitude scale by Likert Method, along with this, there is no need to know the scale value of the statements by rescaling them from experts, but by getting the responses only from the people, the statements are selected. The evaluation of received scores is also very easy in Likert method, and the results received are also legal and reliable. A comparison of Likert and Thurston Method is given in the following Table 14.17.

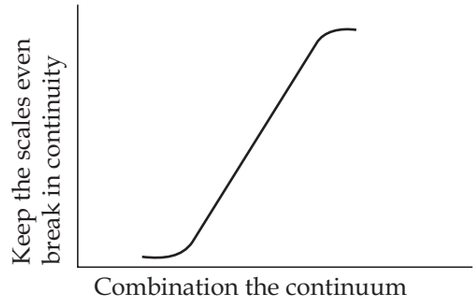
Table 14.17

Comparison of Likert and Thurston Method

Likert Method (Method of Summated Ratings)	Thurston Method (Equal Appearing Intervals)
1. Preparing attitude scale is an easy work.	1. Preparing attitude scale is a difficult Task.
2. This method saves time and labor.	2. This requires more time and labor.
3. Experts are not needed for the selection of statements.	3. Experts are needed for the selection of statements.
4. Statements are selected by calculating T-values by comparing the median values of the statements of the high and low groups.	4. Statements are selected by the experts by arranging them on psychological continuum and after obtaining median and fourth deviation.
5. All statements are given equal weightage.	5. Statements are prioritized on the basis of their scale values.
6. It can be used by untrained or undertrained people.	6. Proper training is needed for preparing attitude scale.
7. Results are more reliable.	7. Results are less reliable.
8. This is measured response method, in which response of the people on different statements are measured on attitude scale.	8. This is a measured statement method, in which various statements are measured on attitude scale.

Notes

Fig. 14.7 Relation between Scale Values from Paired Comparison Method and Equal Appearing Interval Method



14.5 Other Methods

Except the above explained, Couple Comparison Method, Equal Appearing Intervals Method and Summative Rating Method, some other methods are also developed for preparing attitude scale. These are described in brief in the following lessons, and for a deep study of it, interested students can get a vast knowledge from the literature available on preparing attitude scale.

1. Method of Successive Intervals

It was accepted in Equal-Appearing Intervals method of preparing attitude scale, that there is an equal interval between the points on psychological continuum, but this never happens actually. It was found during obtaining the theoretical relation between scale values received on the statements, through Couple Comparative Method and Equal Interval Method, on both the ends on psychological continuum specially, that the statement situated on both the ends on psychological continuum, the scale values received through Equal Interval Method had less influence as compare to Couple Comparative Method, while the scale values received from other statements from both the methods had linear relation.

It was also desirable in this type of situation to invent a new Scaling Method, which should be as easy as Equal-Appearing Interval Method, and can give the scale values as same as received from Couple Comparative Method, having linear relations on total continuum. Therefore many methods were developed which can remove the disparities of intervals on the psychological continuum. The method of successive intervals developed by Thurston, but not published, was published in 1937 by Safeer. Method of Absolute Scaling by **Guilford** in 1938, Method of Graded Dichotomies Attneave in 1949, and **Method of Equal Discriminability** by **Garner and Hake** in 1951 presented these methods, with slight differences. Nowadays, all these methods are known as Method of Successive Intervals.

Actually, Method of Successive Interval is a converted form of Equal-Appearing Interval Method, in this method every Judge has to give one separate judgment on each statement. Therefore, this method is easy to use only in that condition, when the number of statements is more. Any psychological continuum like Eleven Points, Nine Points, and Seven Points can be adopted in this method. After arranging the statements in a sequence on different psychological continuum categories by experts, the scale values are known with the help of cumulative ratios. After that, the attitude scale is prepared through Equal Appearing Method, by selecting appropriate statements, and also the implementation and scaling is same as in Equal-Appearing Method.

Notes

2. Cumulative Method or Scalogram Method

Actually, Scalogram Method is not a method to prepare attitude scale, but it is a method to evaluate attitude scale, in which this is known if the given attitudes scale, is according to a special type of attitude scale studied by Gutman. Gutman said that if an attitude scale or a set of statements is scaling an attitude, means if it is a unidimensional scale, then on this attitude scale, a person getting maximum scores, will get either more scores or equal scores, as compared to any other person getting less scores, on all the statements of the scale. If this scale fulfills all the conditions, then it can be known as Cumulative Scale or Gutman Scale. The responses on the statements are analyzed on a scale in Scalogram Analysis, and it is observed that up to which limit, responses are being analyzed and up to which limit the attitude scale fulfills the conditions of Gutman Scale. For this IOR (Index of Reproducibility) is calculated. IOR, actually, expresses that particular limit up to which, only through the total marks secured on scale, the scores can be reproduced for different people on different statements. Gutman not described any kind of specific method for preparing his cumulative scale, and said that on the basis of experience and insight, statements can be selected. He also mentioned to take care about homogeneity, while selecting statements.

3. Scale Discrimination Method

Edward and Kilpatrick developed a method of preparing attitude scale in 1948 named Scaled Discrimination Technique. In this method they tried to select those statements through the Equal Appearing Intervals Method of Thurston, and Distributive Method of Likert, which can fulfill all the condition of Gutman Scale. The steps of preparing attitude scale by Scales Discrimination Method are same as in Equal-Appearing Interval Methods, first of all many psychological statements are collected and composed very carefully, after that with the help of Equal Appearing Method, the value of Q is known, and the statement having more Q values, near about 50%, are rejected, and the rest 50% statements are applied on a very large group of people in the form of Likert Scale, and for every statement discrimination value is known. Edward and Kilpatrick used Phi-Coefficient to know discrimination value. To known Phi-Coefficient, on the basis of response frequencies by people of High or Low Group are categorized in two categories – Lower and Higher Group. Phi-Coefficient can be calculated by arranging the frequencies according to Table 22.18.

Table 14.18 Determining Phi Coefficient

Response class	Group		Total
	fuEu	mPp	
High class	a	b	$a + b$
Low class	c	d	$c + d$
Total	$a + c$	$b + d$	

$$\phi = \frac{bc - ad}{\sqrt{(a+b)(b+d)(a+c)(b+d)}}$$

Notes

To divide the responses in high and low Groups for different statements, the values of ($a + d$) are tried to minimize. In other words the responses are combined in such a way that the minimum value of ($a + d$) should be received, Nomograph can be used to know Phi-Coefficient.

After calculating phi-coefficients for all the statements, considering the scale values by Thurston and phi-coefficients, the statements is selected finally. The selected statements are given the form of arranged attitude scale arranged according to their Thurston scale values. This attitude scale can be applied on exercisable, in which people have to express their agreement and disagreements limits according to Likert Method. For calculating the responses on any statement, according to the process prepared for knowing phi-coefficient, for minimum response category, mark 0, is used and for high response category mark 1 is used.

14.6 Summary

- Attitudes are very important part of the personality of a person. The appropriate valuation of Attitude could have been started 60 years before, approximately. In the earlier time attitude was scaled through Direct Questioning and Direct Observation Methods. By keeping in mind the limitations of these methods psychologist formulated scaled methods. These scaled methods can be divided in two main parts, Scaled Statement Method and Scaled Response Method. In the present time, Likert's Summative Rating Method, which is a Scaled Response Method, and Equal-Appearing Interval Method of Thurston and Chave, which is a Scaled Statement Method, are very much in use, and the maximum available attitude scales at present are prepared by both of these methods.
- Like any other scaled process, for preparing attitude scale, four main steps are followed (1) Planning about Scale (2) to prepare Attitude Statements (3) to select Attitude Statements (4) to ensure the reliability and legality of attitude and to know the medians.
- In the first step of preparing scale, nature of scale, number of statements, language of attitude, are considered. In the second step, attitude statements are collected and composed through different sources. In the third step appropriate statements are selected, and to select statements, Couple Comparative Method, Equal-Appearing Interval Method, Summative Method and any other method can be used. Mostly for selecting statements Equal-Appearing Interval Method of Thurston and Chave and Summative Rating Method of Likert are used. Likert's Summative Rating Method is mostly used in both of these methods, due to its easiness. In the fourth step of preparing scale, reliability and legality is known with the help of selected statements, and the list of values is prepared.

14.7 Keywords

1. **Attitude**–Humor
2. **Random**–Disorderly

14.8 Review Questions

1. What do you mean by Attitude? Describe the difference between Attitude and other similar concepts.
2. Describe the Methods of Attitude Scale in detail.
3. What is Attitude Scale? Describe the steps of Attitude Scale.
4. Describe Summative Rating Method.

Notes

Answers: Self-Assessment

1. (✓) 2. (×) 3. (✓) 4. (✓)

14.9 Further Readings

Books

1. Development of Learner and Process of Learning Education—*A. K.Verma, Hindi Book Centre, New Delhi.*
2. Psychology—*Dr. Saryu Prasad, Agra Book Store, Agra.*
3. Education Psychology—*S.K. Mangal, P. H. I. Learning Pvt. Ltd., New Delhi.*
4. Psychology- Study of Human Behavior—*Braj Kumar Mishra, P.H.I Learning, New Delhi.*

Notes

Unit–15: Aptitude

CONTENTS

Objectives

Introduction

15.1 Meaning of Aptitude

15.2 Measurement of Aptitude

15.3 General Aptitude Tests

15.4 Differential Aptitude Tests

15.5 Special Aptitude Tests

15.6 Summary

15.7 Keywords

15.8 Review Questions

15.9 Further Readings

Objectives

After studying this unit, students will be able to—

- Understand the meaning and measurement of aptitude.
- Obtain information concerning the general, cathartic and specific aptitude tests.

Introduction

In everyday life, it can often be heard from several people like teachers, parents, administrators, Officers, reviewers etc. that particular student's is interested in mechanical works therefore he would be an engineer, or a student may become a better musician in the future, a girl, will be more successful as a housewife in future or so and so will be a talented and able administrator. These types of statements of these individuals means that the concerned student, girl or person has such type of talent, ability or capacity which may play an important role in getting success in a specific sector. Such talent, aptitude or ability is usually congenital and it is called aptitude in the language of psychology. Knowledge of aptitude is an important factor in the field of educational, professional and psychological consultation. By identification of the aptitude of children, they must be educated and trained in those specific areas where they can excel. Forcing the children to join an aptitude-less field, is actually a sheer wastage of time, money, and power. At the time of selecting the candidates

for education and employment, the aptitude of the individual should be kept in mind. Measurements of aptitude are discussed in this chapter.

15.1 Meaning of Aptitude

Aptitude indicates the specific ability and capacity of an individual in a particular area.

According to Bingham, "An aptitude is a characteristic or set of conditions, that are symptomatic to the individual's ability to acquire with some specified training some knowledge or skill or a set of responses in a given field."

In the words of Freeman, "An aptitude is a city combination of characteristics indicative of an individual's capacity to acquire (with training) some specific knowledge, skill or set of organized responses, such as the ability to speak a language, to become a musician, to do mechanical work."

Notes Proficiency not only includes efficiency in motor and manual activities but it also includes other work efficiencies in language, history, economics, mathematics, science etc.

It is clear from the above interpretation that aptitude is the trend, interest and ability of an individual which is important for achieving success in a particular work, syllabus or business. Readers also have to understand the difference between an aptitude, and skills and proficiency. Skills imply the ability to do a given task with ease and precision. Meaning of proficiency is much the same but it is more comprehensive than skills. Proficiency not only includes efficiency in motor and manual activities but it also includes other work efficiencies in language, history, economics, mathematics, science etc. Aptitude means to acquire the proficiency in a particular area in appropriate circumstances. In other words, aptitude indicates the potential ability of prediction to achieve success in a particular area. The real intent of Aptitude will be apparent from Figure 23.1

Bingham has mentioned the five key features of aptitude; these five characteristics are as follows:

(*i*) Existing aptitude of a person is a set of his qualities that indicate its future capabilities.

(*ii*) Aptitude of a person expresses his fitness to perform a task.

(*iii*) Aptitude is not the name of a tangible object or ability but an abstract noun which expresses special attribute of the personality of a person.

(*iv*) Aptitude is the symbol of the future capabilities while staying in future.

(*v*) Ability, interest and satisfaction closely relate to aptitude.

In addition to the above mentioned five characteristics of aptitude, Bingham also described the following three assumptions of aptitude:

(1) All the aptitudes of a person are not same. Differences in different aptitudes of a person are natural. A person may have less aptitude for a work but he may have more aptitude for any other task.

(2) The nature of the aptitude is individual. In other words, individual differences are found in aptitudes. Differences in aptitudes of any two individuals are obvious.

(3) Though aptitudes of person remain stable but there may change, however these changes are gradual and very meager.

Notes

15.2 Measurement of Aptitude

Aptitude tests are used to measure the aptitude. According to Freeman, "An aptitude test is one designed to measure a person's potential ability in an activity of a specialized kind and within a restricted range."

Did u know? The process of aptitude test is more or less same as IQ tests. The basic difference is basically of the content of the works and activities which are used in the test.

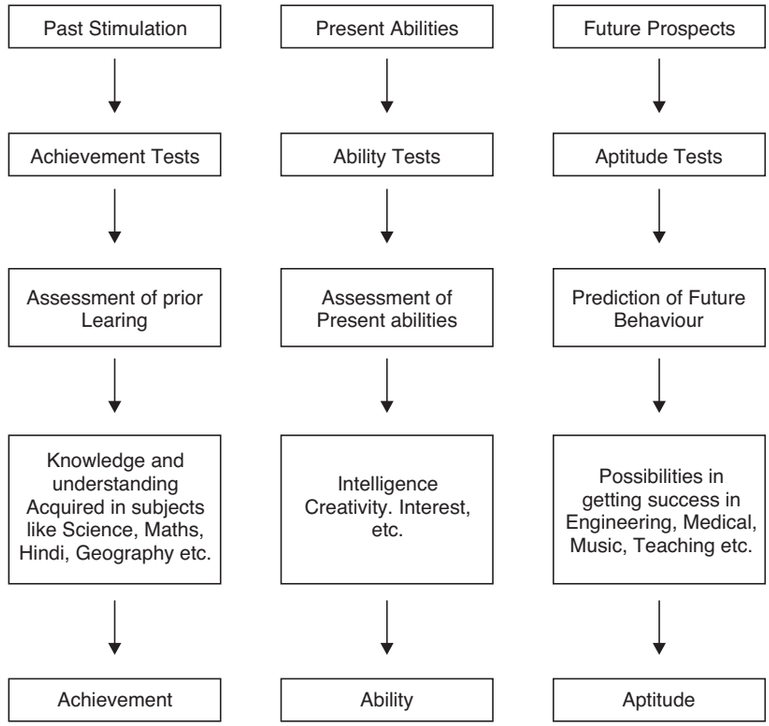
Aptitude tests can be classified in three parts on the basis of their nature—

(*i*) **General Aptitude Test**

(*ii*) **Differential Aptitude Test**

(*iii*) **Specified Aptitude Tests**

Fig. 15.1 Comparision of Achievement, Afility and Aptitude



15.3 General Aptitude Tests

General aptitude test can measure any normal action potential. These tests often measure the person's general intelligence, learning ability or mental ability. These types of the test indicate the success in future

of a person because by the general intelligence tests educational success of a student can be predicted successfully. So some scholars also like to call them scholastic aptitude test. It is clear that in the aptitude test category, the instruments like general mental ability tests or general intelligence test are used.

15.4 Differential Aptitude Tests

These types of aptitude tests are generally battery type tests. In other words we can say that these tests are either a series or chain of tests or they have different sub-tests. There different tests or sub-tests indication a person efficiency in different fields and on the basis of the comparative study of the scored points in these tests, the areas with maximum aptitude are recognized. As these tests also indicate the differences in the aptitude, they are also called differential aptitude tests. These tests include tests related to verbal, numerical, place, mechanical knowledge, clerical capability, and behavioral tendencies. Discriminative aptitude tests (DAT), general aptitude test battery (GATB) , aptitude observation (AS), and aptitude classification tests are some of the foreign aptitude tests. Some of these tests have already been pursued in Indian conditions and are used in India. No fundamental and successful test of differential aptitude has been done in India till now. To give the knowledge of the differential aptitude test, following description of DAT by the psychological corporation of America is presented here.

Task Give your views on the reasons why no fundamental and successful test of differential aptitude has been done in India till now?

The Differential aptitude test (DAT) by Bannett, Seashore and Wesman, published by psychological corporation of America is one of the most famous and popular aptitude tests. This tests is for Class VIII to XII and its forms, S and T, are available. Every form has eight sub-tests which are arranged in two test booklets. One booklet includes four tests: verbal reasoning (VR) numerical ability (NA), abstract reasoning (AR) and clerical speed and accuracy (CSA) and a time limit of 30, 30, 25 and 6 minutes total 91 minutes, respectively, is determined for each test. Other booklet is comprised of other four tests: mechanical reasoning (MR), space relations (SR), spelling (SP) and language usage (LU) and they are assigned a time limit of 30, 25, 10, and 25 minutes (total 90 minutes). Though the time is fixed for all the eight tests, but only the test of clerical speed and accuracy is a speed test, while all others are power tests. The whole test can be administered in four or six sessions as per the situation. Scores are given for each test. The test makers also indicated a ninth scoring point, i.e., VR + NA which is expressed as general scholastic aptitude. These nine marks are changed into percentile ranks and Stanines. By using equivalent method for clerical test and semi severance method for other tests, the reliability coefficients of sub-tests are found from 79-97 for boys and 80-97 for girls. The predictive validity and concurrent validity of this test chain is obtained here.

The results of the research work related to the prediction of the scored grades by the students in different subjects with the help of DAT are following—

(*i*) Marks in VR + NA, LU and VR can very well predict the grades in English.

(*ii*) Marks in VR + NA, or from NA only, the grades in mathematics can be very well predicted.

(*iii*) Marks in VR + NA, VR, NA or LU can very well predict the grades in science.

(*iv*) Marks in VR + NA, VR, NA or LU can also very well predict the grades in social studies.

(*v*) The value of the correlation coefficient between the best marks in DAT in the sub-tests and the grades in different subject was from 40 to 60.

(*vi*) The value of the correlation coefficient between the marks in VR+NA and the marks in general knowledge tests was from 70 to 85.

Notes

15.5 Special Aptitude Tests

Specific aptitude tests are used to measure the aptitude of a person in any specific field. For example Mechanical aptitude test, Music aptitude test, teaching aptitude test, and medical aptitude test are prepared to measure the aptitude of a person in the fields of mechanics, music, teaching and medical. To measure the specific aptitudes, following are the some foreign tests:

(*i*) Seashore Measures of Musical Talent

(*ii*) Wing standardized Tests of Musical Intelligence

(*iii*) Musical Aptitude Profile

(*iv*) Horn Art Aptitude Inventory

(*v*) Meier Art Tests

(*vi*) Graves Design Judgment Tests

(*vii*) Minnesota Clerical Test

(*viii*) Test of Mechanical Comprehension

(*ix*) Medical College Admission Test

(*x*) Law School Admission test

(*xi*) Pre-Engineering Ability test

In India also, some aptitude measurement tests are prepared by the researchers, psychology schools and commercial consulting firms. Some of them are following—

(*i*) Mechanical Aptitude Test – Atmanand Sharma

(*ii*) Clerical Aptitude Test – Kiran Gupta

(*iii*) Scientific Aptitude Test Series – K.K. Agrawal

(*iv*) Teaching Aptitude Test – Singh and Sharma

(*v*) Test of L form of DAT – J.M. Ojha

Self Assessment

Fill in the Blanks:

(1) Marks in VR + NA, or from NA only, the grades in ..... can be very well predicted.

(2) The value of the correlation coefficient between the best marks in DAT in the sub-tests and the grades in different subject was from ..... .

(3) The Seashore Measure of Musical Talent comes under ..... test.

(4) In Indian, the credit for Mechanical Aptitude Test goes to ..... .

The pre-medical tests for the admission in medical colleges, the admission test for engineering education and the B.Ed. Admission test for B.Ed. Classes are some of the non-standardized aptitude tests.

15.6 Summary

- The efficiency or capability of a person which predicts a person's success in a specific field is called aptitude. With the help of aptitude, the success or failure of a person can be predicted. Aptitudes indicate the possible potentials of a person. Aptitude tests are used for measuring aptitudes.

Notes

- Aptitude tests are divided in three categories: (*i*) General Aptitude tests, (*ii*) Differential Aptitude tests, and (*iii*) Specific aptitude tests. The General aptitude tests measure the general efficiencies and capabilities of a person. These are very much like mental ability tests or IQ tests, which are capable of predicting the normal success and failure of a person. The Differential Aptitude tests indicate the aptitudes in different fields. They are general series type of tests. Specific aptitude tests are used to measure the aptitude of a person in any specific field. In India, there has been very minimal work in the field of aptitude tests.

15.7 Keywords

1. **Aptitude:** Interest, Ability

15.8 Review Questions

1. What is Aptitude? Describe with definition.
2. Describe the various Aptitude Tests used for measuring aptitude.
3. Describe the characteristics of Differential and Specific aptitude test.

Answers: Self-Assessment

1. Mathematics **2.** 40 to 60 3. Specific Aptitude 4. Atmanand Sharma

15.9 Further Readings

Books

1. Importance of Education in Children and Information — *Seema Chopra, Hindi Book Centre, New Delhi*
2. Educational Psychology — *S.K. Mangal, PHI Learning Pvt. Ltd., New Delhi*
3. Development of Learner and Teaching Learning Process — *A.K. Verma, Hindi Book Centre, New Delhi.*
4. Psychology — *Study of Human Behavior, Brajkumar Mishra, PHI Learning Pvt. Ltd., New Delhi.*

Notes

Unit-16: Thinking, Reasoning and Problem-Solving

CONTENTS

Objectives

Introduction

16.1 Nature of Thinking

16.2 Types of Thinking

16.3 Tools of Thinking

16.4 Language and Thinking

16.5 Thinking and Education

16.6 Reasoning and Problem-Solving

16.7 Types of Reasoning

16.8 Training of Logical Thinking

16.9 Meaning of Problem-Solving

16.10 Methods of Problem-Solving

16.11 Summary

16.12 Keywords

16.13 Review Questions

16.14 Further Readings

Objectives

After studying this unit, the students will be able to:

- Understand the nature and types of Thinking.
- Know the tools of Thinking.
- Understand the Language, Education and Thinking.
- Know the Reasoning Problems and Types of Reasoning.
- To obtain information concerning the training of logical thinking.
- Problem - to understand the methods of solution.

Introduction

Human thinking has important contribution in the development of the world. Human being is considered as great among all the species only because of its thinking-power. He is a thinker by nature. This power is a god gift to him. According to the psychology, thinking is a mixture of sensation, visibility, concentration, memory and imagination etc. There is a purpose in thinking activity of a person.He uses thinking to accomplish this purpose. A person has to make efforts to fulfill his willing or aim and to get success in this kind of work, he has to plan in beginning and has to work carefully for this planning, and then he gets succeed.Therefore it is important to emphasis on thinking and logical-power of children with the means of education.

16.1 Nature of Thinking

In previous chapters we discussed about learning process and knowledge development related phases such as, learning and interest, habit, construction, sensation and visibility, memory, imagination etc. these activities are included in the difficult process of learning. That activity or process in which we use our past experience to face new conditions and to solve a problem, that mental process is called **thinking.**

Notes Children should be trained in educational activities for thinking, so that they can use their acquired knowledge and can acquire more knowledge. Some children may naturally be good thinker then others; thinking-power and concept-formation can be developed by intellectual training.

Psychologist T.C. Morgan presents his thought in this regard as: "Actually the word used in daily life 'thinking' includes detailed configuration of various activities." At one side it means remembering or something more than memory. For example, sign boards on the roads displaying "Think, carelessness means accident", here think means to think about the accident or keep in mind. In the same way if someone says that 'tell after thinking' then he says about to learn that thing which we have learnt somewhere. Some kind of thinking is involved in these situations of memory. On the other side the word 'thinking' represents that serious thinking process, in which a scientist is engaged in solving a complicated problem. He clashes with the principles of mathematics or think about various procedures, by which he can solve the problem.

Whether thinking is easy or complicated, a fact is always involved in it, a mediator activity. At the time of thinking we connect past problem with current situation. Gap between Stimulated situation and the activities we do for it, is filled by mediator activities. When we are engaged in solving a problem these activities creates those elements, which we possibly do it with trial and error method. Here is a popular example to explain it:

"Suppose you have to solve a jigsaw puzzle. The difficult way to solve the puzzle is to join it's every part actually and see that it is matching with the other part or not, it is to solve the puzzle by 'trial and error'. If there is large number of parts in this puzzle, then it will take more time and have to do thousands of 'trial and error' attempts. Possibly you will perform some of the activities out of it. But you will select two or three possible activities which are closer to the right activities, mostly you will think. There will be several activities in your mind, in which you can put parts like actually you are putting in 'trial and error' method. You will think before putting them by hand, that can they will be getting their right place or not? So you will do by thinking that you are placing the pieces to the right place. In the same way we can take example of the game of chess where we will think about the place of pawn before putting them at right place.

Notes

From above examples it is clear that how a thinking process work as the mediator.

In the same way **Psychologist Hughes** has defined the word thinking process with the help of an example of a puzzle: our thinking process keeps on moving to solve a word group puzzle. We think again and again about the suitability of a word and then we concentrate on the thought included in a particular word. In this way various solutions of a problem arises within our mind. But it is not sure that the identified word is suitable to fill the gap. If you got excellence in finding group puzzles then it is also possible that the word in your mind is not correctly right after re-thinking. Therefore attempt to find right word and thought involve in word continuously run within the mind and at the end a solution which is right from every aspect suddenly rises.

Thinking is a cognitive process. It includes obvious and imagination knowledge. In other words thinking or thought is involved in every mental activity of a person. It is the activity of human mind that prepares us to face any condition.Because of the thinking power a person imagine a possible activity of livelihood or prepare mental sketch of it and tries to adjust according to the upcoming circumstances.

Did u know? Animals learn by reality and mistakes and solve the problems. But human being ends 'Trial and error' activity at ideational level. At the time of thinking problems are solved with the help of symbols or language.

When thinking is made on a problem, various solutions arises within mind and the solutions which are not appropriate, we give up them. In this way we try to solve the problems with possible solutions. Therefore we can say that thinking is that mental activity, through which we can solve problems. To clear the meaning of thinking it is important to study the definitions of various psychologists. Which are as:

(1) Warren: "Thinking is an ideational activity which is symbolic in character, initiated by the problem or task the individual is facing, involving some trial and error but under directing influences of his problem set and ultimately leading a conclusion or solution of the problem."

(2) Ross: "Thinking is mental activity in its cognitive aspect."

(3) C.W. Valentine: "In Psychological discussion it is well to keep the term thinking" for an activity which consists essentially of a connected flow of ideas which are directed towards end of purpose."

According to **Woodworth** thinking process involves following elements:

1. Looking towards an objective or goal. 2. Make efforts to get that objective. 3. Remember earlier experiences or inspected facts/elements. 4. Adjust the past experience into the new pattern. 5. Internal talking and posses.

Thinking process includes these elements. Educationalist Divi has also explained about the five argument situation within human brain in his book 'How We Think'.

According to D.V. thoughts are completed by five steps:

1. Thinking begins with a problem or trouble.

2. Complete definition of situation arises within mind.

3. A description of possible solutions prepared on the basis of various advises.

4. Best solution is presented for use after analyzing all the solutions.

5. Solution is accepted or rejected according to the result of re-examination and use.

In this way thinking is a difficult mental job, which starts with the arising of a problem and continuous till the end of solution. In this way above steps are helpful in the solution of problems.

In education, knowledge earning should be emphasizes by keeping this in mind.

Thinking process is mainly possible at two levels. First stage is Preventive, Mr. Ross defined it as: "Mental activities related to those objects which are present with senses and affect them", in this thoughts reaches to the mind through sensations. Sensation is the objective form of thinking. Appearing and sensation has been already discussed in previous chapter. Second stage is Conceptual. To understand this we have to concentrate on conceptual process and means of thinking. These are explained further.

The Art of Thinking: as it said in above example that high thinking is made within mind during finding the answer of word group puzzle and thus, a person get a chance of introspection, due to which he is at a position to find out the following step in thinking process. Psychologist Hughes has defined these steps as:

1. Appreciation of a problem
2. Collection of adequate relevant data
3. Arriving at a conclusion
4. Testing the conclusion

With the help of above steps we can improve the thinking-process of children. These steps are explained as:

1. Appreciation of Problem: Arising a problem is the result of experience and activities of person or whatever he thinks is useful. Child also appreciates a problem in the same way. Initially his problems are related to existing objects/things, not with words or not existing thoughts. For example, a child is play with water near the tap. He sees that water is coming through the tap. Then he questions in the mind or verbally from where water is coming? For him it is a problem which increases his curiosity. He can take help from somebody to solve this problem, but he himself think on it. When somebody starts him telling about how water is coming then he tries to understand the things and he starts thinking. Therefore introduce child with problem in such a way, in which he will really take interest and curiosity can born within him and will do stimulus work to solve the problem. As the physical and mental development take place then he also tries to think without actual things. At this time words became meaningful and a specific condition can be imagines. Therefore teachers need to choose subject-matter smartly and create problems for the thinking of child.

2. Collection of Adequate Relevant Data: After understanding problem we start collecting those elements/facts can be helpful in solving the problem. Various advise appear in our mind will be controlled with our purpose. Facts can be collected by memory, study, inspection or questions. Here teacher have to see that student have right grasp the problem and then motivate them to awoke memory to collect required/important facts, instruct to repeat earlier gained knowledge, advise to study good books is the responsibility of teacher. Remembered facts are the main things of thinking-process. Here in education example of project method can be supposed. In this method work has a purposeful scheme/plan. Child selects a work of his choice. This work has a purpose. Problem is putted in front of him to fulfill the objective/purpose. He actively try to participate in solving the problem, thus gets knowledge of various subjects. When a problem arises in front of children then they are deeply engaged in collecting information and they tries to see the relation of one item of knowledge with another item.

3. Arriving at a conclusion: Teacher should tell the process of creating record of elements collected earlier. With the help of it an item can be compared with another and it helps in reaching to conclusion. For example research related work and problem in science related scheme are presented, like research on physical and chemical equipments used in daily life, study of various plants and tree of garden. What conditions are required in budding of a seed? In this experiment effect of water, air, light, temperature etc. factors are observed and a conclusion came brought out by fine inspection of those observations. In this way children learn by their interest and efforts and get benefit from their experiences.

4. Testing and Conclusion: Inspection of the result of thinking process is also important. These results should not against the pre-defined truths. If some kind of mistakes are there, then re-inspection of

Notes

collected facts and proper directions should be motivated. Solutions are accepted or rejected according to the re-inspection, experiment and result.

16.2 Types of Thinking

Psychologist told about the following types of thinking:

1. Perceptual Thinking: this kind of thinking is observed/present in animals and kids. Base of this kind of thinking is obvious knowledge. Here sensation and obviousness works. A person thinks after seeing an object or condition. In this any kind of word or name is not used. This kind of thinking is based on past experiences. For example, a child burnt by fire, afraid by watching fire again. In the same way when a child does not complete home work, then he is afraid of punishment, his fear involves thinking. This thinking is of primary stage.

2. Imaginative Thinking: In this kind of thinking there is no object or condition is present obviously. There is lack of apparent. Here past experiences are used through memory and thinking is made through mental talent. As objects are not present obviously, objects are imagined with the help of efforts. For example, every day father get something for child while return to the home at evening therefore at the time of evening child waits for father and think about the object. It is imaginary thinking.

3. Conceptual Thinking: It is the best kind of thinking. Earlier established is used in conceptual thinking. First of all thoughts are tied with sense perception. Slowly they reached to the concepts and the person reaches to a conclusion by keeping the future in mind by thoroughly inspecting an object or situation on the basis of past experience. To understand conceptual thinking it is also important to know about 'concept knowledge'.

4. Logical Thinking: It is the most outstanding form of thinking. Divi defined it as 'Reflective Thinking'. To understand the complicated process of thinking, it is important to study concept establishment, argument and problem solution subjects.

16.3 Tools of Thinking

Often some kind of problems may arise during finding solution of a problem like, diversion of mind due to various stimulations or to be restless etc. help of some tools is to be taken to defeat these problems, these are called main tools of thinking. These are as following:

1. Image: person sees the object in his practical life creates an image of it within his mind. According to Mr. **Drever**, "image is the knowledge in the absent of object, which have fixe in our sense perception in beginning." Different images related to different sensations form within the mind of a person. Like, touch, sight, hate, audition, smell and taste related images of sensations. Generally sight imaging is considered as chief imaging amongst all these sensations **Raus** said – "primary memory images can be considered as substitute to real sense perception". For example when I see a book then it is a sensation, but if I close my eyes then I see the book again and now it is a visual. One of the important sign of visuals is that it is realized as it is not present for senses. These images are called as tools of thinking. There is a question present in relation to image is, what is the role of image in thinking? Are they mediator activities in thinking? Some scholars have supported it and some opposed it. To answer this question, psychologists have made sober experiments on the importance of images in thinking.

2. Symbols and Signs: Symbols or signs are also helpful as the means of thinking. These are presented as picture, words or by the means of objects. Symbol is the sensation that represents the objects in its absence. Like, our thinking is totally different while we see the Red, Yellow and Green signals at traffic crossing.

Notes

Psychologist Woodworth defined symbolic means in thinking with an example as: "if you are explaining how your car get collide with another car, then you say : it is a road and it is another road, assume that this book is my car and the second book is second car", here two types of objects and words are used as the symbol in place of the absent object. Book and the said place indicate the symbol of incident and these words 'my car and another car' are the oral signs that indicate the absent objects. Thus we see words and picture are the means of thinking.

3. Language: language is the primary means of thinking. We establish relation between image and thought. A person presents his thoughts with the help of language. Every word of the language is a definite perception-symbol of an image or concept. Person with higher language-knowledge will have higher percentage of success in thinking. More description on language and thing is made ahead.

4. Concept: Concept is an important base of thinking. Concept is also called general notion. In the construction of general concepts mind brought out the prominent values involve in the individual images, mixes it with the general values involve in it. Thus we see in the formation of concept equalization and differentiation have important role. Form of concept and concept-formations will be defined ahead.

16.4 Language and Thinking

Language forms the thinking. Language is an important tool of thinking. Person thinks with the help of language. Language is the means to express thinking clearly. Some psychologist called thinking as inner speech. The person having more language-power or word-power can express his thinking in easy and clear way. Language may be verbal or symbolic. Often people debate on a difficult problem or express through hand or face posture.

It indicates that a form of language is used in thinking. Various forms of thinking are coordinated through language. Language is a kind of symbol, through which a person can express or present his emotions and thoughts. A person express his thinking or thought through the words present in his mind. **Valentine** expressed his thoughts related to language and thinking as: "Language is helpful in the formation of concept. A word became the central ideal, whether it is developed in the form of image or proposed activity or in the form of thinking associate". For example, when we say the words book, copy or pen individually then he understand the meaning, even these things are not shown to him. He has the image of book in front of his and he has the concept of book. At the time we say 'book' he understands that there are pages in the book and is an object of reading. Language is helpful in this kind of thinking. Here the word 'book' work as a symbol for book and the help of symbol is taken in thinking process. There is a deep relation between language and thinking and without language thinking is impossible. But some psychologists believe that thinking is possible without language. Usually there are some conditions where we think without the use of language. Sometimes we do not find the right words to express our thoughts. But it is all pervasive that language is very important in thinking. According to this fact there are following works of language in thinking:

1. Thoughts are expressed by language.
2. Language is the means of discussion; thoughts are expressed only with the help of language.
3. Language is assistance to thinking.
4. Formation of concepts is based on language-development.
5. Language has more importance in concept-thinking. We finally name the general concept at the last mental process of concept formation by using the word or language.
6. Language is helpful in remembering.
7. Language is the means of conservation of thinking. Language minimizes the need of thinking. We can express extensive thoughts in fewer words.
8. Thinking can be expended by language.

Notes

9. Language helps to concentrate towards thinking. In the process of thinking internal speech is helpful in the situation of indirection.

In this way we can say that concept and language has close relationship and language and concept has important role in development of thinking. These are the two main tools of thinking.

16.5 Thinking and Education

In the field of education thinking is of extreme importance. It is the important mental activity of a person. Education has the highest post in mental development. It is important to improve thinking-power for the smooth functioning of education. Teacher should take following steps to develop the thinking power of the students:

1. Emphasis on the Development of Concept and Experience: Concept knowledge and experience of bulky objects are of much importance in thinking-process. Therefore teachers should create this kind of situations in front of student and give opportunity of inspection so that student can make concept by personal experience.

2. Help in Concept-Formation: Teacher should help in concept formation by scientific way. Concepts are based on personal experiences. Therefore they should provide various facilities to get experience. Teacher should clearly teach about each and every subject. Thinking power develops with the help of concept-knowledge.

3. Emphasis on Language-Development: Language is called the foundation of thinking. Thinking can be only expressed with the help of language. Language and thinking have deep relationship. A proper dictionary is required to the memory of past experience. Therefore a good, interesting and proper teaching technique should be adopted to increase the dictionary of students.

4. Remove the Habit of Cramming: It is responsibility of the teacher to look after the habit of cramming within the students; they should be motivated to learn by understanding. Often, students cram the definition in subjects like science; grammar etc. and the teacher also make them to cram the definition without any related experience. This kind of knowledge is not clear, student use this kind of knowledge without any thinking as it is. Various examples should be explained to the students to attract them towards the general law, so that they themselves can create definition. This process is helpful in thinking development.

5. Create the Curiosity: Teacher should create such kind of situations in front of the student so that, it can create curiosity within the student towards subject and he can make thinking to understand the subject.

6. Development of Concentration and Interest: It is very important to have concentration and interest for thinking. If we don't have interest in a subject then we cannot concentrate on it. Therefore teacher required to create concentration and interest for usual thinking, through proper teaching-method.

7. Inspiration: Thinking needs inspiration. We think on the solution of a problem by an inspiration. Therefore child should be motivated for acquiring knowledge and problem solution.

8. Provide Opportunities for Argument and Debate: Teachers should provide opportunities for debate in education, subjects related to syllabus. Such as, by organizing group discussion, debate competition etc. in this way students get the opportunities for thinking and discussion related to syllabus and other general knowledge.

9. Handing over the Responsibility: Those activities where responsibility is involved should be handed over to the students. This will motivate the healthy thinking.

10. Provide Opportunities for Thought-Expression: students should be provided with the opportunities to express their view freely. There should be no unreasonable disturbance in their freedom. **Nobel and Mauntesri** supported the principle of self-working and freedom for the self-expression of children in education.

Notes

11. Concentrate on teaching technique/process: Teacher should take help of proper teaching-processes by psychological method for the development of thinking-power. Thoughtful questions should be asked to the students and questions should be asked differently in exams. Thinking ability can be developed by proper teaching-method.

16.6 Reasoning and Problem-Solving

Reasoning is the best form of thinking. Reasoning is a process of thinking, the concepts earned in it are used to define a situation and for solution. When concepts are organized in a proper manner within the mind then a new problem is solved with the help of these. A person has to solve many problems in his daily life. Various problems are to be faced, so that adjustment can be made with situations. Problem is that situation for which a person does not have a predefined solution.

When a problem arises then a person needs to consider about it. In this situation of reasoning-thinking arises. For example, "my pen which was on the study table lost somewhere. Pen is valuable therefore I have a problem to find the pen and I make search for it and I think who have taken my pen? May be the mate, who entered the room for dusting, or my sister, who have exam today, then I reached to the conclusion that, I am getting late for school, I will definitely get the pen from the younger sister. Thus, the current problem will be solved. It is an reasoning. Woodworth called reasoning as **'mental exploration'**. In simple words an attempt to made conclusion by examining the current situations on the basis of past experience or memory subject, with the help of reasoning. Getting a conclusion is the major element of reasoning. To reach on a conclusion it is important to have a well organized mental activity and managed reasonable thinking process. Various philosophers have given various definitions of reasoning to understand reasoning:

1. N.L. Munn: "Reasoning is combining past experiences in order to solve a problem which can-not be solved by mere reproduction of earlier solutions."

2. Bernard: "Reasoning is a process of delaying response until data are arranged into a new combination so that a clearly perceived goal can be reached."

3. Gates and Others: "Reasoning is productive thinking in which previous experiences are organized or combined in new ways, to solve a problem."

16.7 Types of Reasoning

1. Inductive Reasoning—In this kind of reasoning a person finds a principle or general rule/law, on the basis of the elements or examples, which he had find with his personal experience. It is believed that there is no pre-defined principle in this kind of reasoning. Coming of reasoning have three levels: (1). Inspection, (2).experiment, (3). Generalization. In this first of all elements are inspected. A principle is imagined after inspection and its reality is tested after experimenting/using it. A general principle is defined as a result of experiment/use. Example of inductive reasoning can be seen in the education of language, such as teacher has to define noun in grammar. Teacher does not tell the definition of noun in beginning. Students are firstly introduced with the name of thing, place and persons, then students are helped to reach the conclusion with the help of question, that the name of a thing, person or place is called noun.

2. Deductive Reasoning—Pre-defined thinking or principles are accepted in this kind of reasoning and the reality of an object or situation is proved on the basis of it. For example, every person is mortal. Ram is a person, means he is mortal.

On the above bases of reasoning, in the words of **Bhatia** we can say that "Inductive process is the process of discovery/research and 'Deductive process' is the process of experiment and evidence".

Notes

16.8 Training of Logical Thinking

Mental power of child develops only with the help of reasoning and thinking. Therefore in education for thinking-process it is important to develop logical-power. Following things to be consider for logical thinking-power of children:

1. Present the Proper Problem: For logical thinking expected problem should present to him by considering his past experience, mental and educational level.

2. Development of Concentration, Attachment and Research: Teacher should avail required opportunities for the development of these tendencies. Logical thinking cannot be made in the absence of these tendencies.

3. Present the Practical Problems: The problems present in front of students should be related to their current practical life and should be useful.

4. Use of Proper Teaching-Techniques: in the development of logical thinking power problem based activities such as, project-activities, question-answer-process and Speech competition, debate competition, discussion programs are very helpful. Reasoning power is used in these and required opportunity for the development of imagining power and conceptual thinking are available.

5. Principle of Innovation: To encourage the interest for a problem within children new problems should be presented. They should avail the opportunities to 'learn by doing' and learn by experience' and they should be motivated for it.

6. Deep Study of Subject: Children should be motivated for the deep study of the related subjects according to the situation and requirement. It helps in the development of logical-thinking.

7. Use of Inductive Process: Teacher should use inductive process for teaching syllabus. Teachers should not put the solution of a problem, infect should ask to the students for solution. This process develops the maximum logical-thinking.

8. Scientific use of Reasoning and Problem-Solution: Teacher should teach about the scientific-process of reasoning. Students themselves can consider a principle with the help of this process.

Self Assessment

Fill in the blanks:

1. Man accomplish the ..... activity at the level of thinking.
2. In relation to the thinking Ross said that thinking is the ..... aspect of mental-process.
3. ..... is an important means of thinking.
4. ..... is the best form of reasoning.

16.9 Meaning of Problem-Solving

Problem-solution is an important part of reasoning. It has been cleared that the aim of reasoning/ argument is the solution of a problem. Stanley Grey has defined problem-solution as: "Problem-solving is a process of overcoming difficulties that appear to interfere with the attainment of a goal.

D.V. have explained about five reasoning situations and reasoning is called as logical-thinking. It is explained earlier. Problem is solved only with the help of logical thinking.

Notes

16.10 Methods of Problem Solving

Problem solving has following methods:

1. Solution of problem without learning and by nature/behavior: the species of lower section use this kind of method to solve their problem. For example, snake and Honey Bee are always ready to sting for their protection.

2. Trial and error Method: Tharndike used a cat and confirmed that animals solve their problem by trial and error. Similarly when men try to solve a problem at that time a process of trial and error runs in the mind of men in the form of thinking which is problem related, out of which any one solution solve his problem.

3. Perception Method: problem can be solved by this process. In this relation the experiment made by Koehler on chimpanzee is remarkable.

4. Scientific Method: today scientific method is used for problem-solution in every field. In this work is done in a well managed manner from the beginning to the end. In this first of all the problem related facts are collected by actual inspection, after that grouping of the facts made according their similarities and finally a conclusion is brought out by analyzing it.

At the end we can say that training of logical thinking should be given in education. Teacher should be well trained in scientific method of problem-solving and it should be used for every subject and levels as per the requirement.

16.11 Summary

- Thinking-process has an important role in the development of the world. Human being is considered as the best amongst all the species only because of thinking-power. It is a thinker by nature. This power is a god gift to him. According to the psychology thinking is a mental process in which sensation, obviousness, concentration, memory and imagining are involved.
- The mental process, in which we use the conclusions of our past experience to face new situations and to solve a problem, is called 'thinking'.
- Thinking is a cognitive process. It includes conceptual and imaginary knowledge. In other words, thinking or thoughts is involved in every mental activity of a person. It is the mental process of a person that makes us ready to face a new situation. Because of the thinking a person can think of a possible event or draw a picture in mind and tries to adjust according to the situation. Animals solve their problems by trying and mistake. But human beings complete this process at ideational level. Symbols or language is used to solve the problem at the time of thinking.
- Psychologist said about the following types of thinking: Obvious thinking, imaginary thinking, conceptual thinking, and logical thinking.
- In the field of education thinking is the important activity of human mind. Thinking has the highest post in mental development. It is very important to develop thinking power for the smooth functioning of educational activities.
- Reasoning is the best form of thinking. Reasoning is a process of thinking, the concepts earned in it are used to define a situation and for solution. When a problem arises then a person needs to consider about it. In this situation of reasoning-thinking arises.
- Getting a conclusion is the major element of reasoning. To reach on a conclusion it is important to have a well organized mental activity and managed reasonable thinking process.
- Mental power of child develops only with the help of reasoning and thinking. Therefore in education for thinking-process it is important to develop logical-power.

Notes

16.12 Keywords

1. **Thought**—Idea, Reason.
2. **Inductive Reasoning**—Generalization.
3. **Deductive Reasoning**—Reasoning from the general to the particular (or from cause to effect).

16.13 Review Questions

1. What do you mean by thinking? Define the nature of thinking.
2. Define the types of thinking.
3. Describe the tools of thinking.
4. Define the importance of language as a medium of thinking.
5. Describe the importance of thinking in education.
6. Describe problem solving through reasoning.
7. Define the methods of problem solving.

Answers: Self-Assessment

1. Trial and Error
2. Cognitive
3. Language
4. Thinking

16.14 Further Readings

Books

1. Importance of Education for Children and Information—*Seema Chopra, Hindi Book Center, New Delhi.*
2. Education Psychology—*S.H. Sinha & Rachna Sharma, Atlantic Publication, New Delhi.*
3. Education Psychology—*S.K. Mangal, P.H.I. Learning Private Ltd., New Delhi.*
4. Adhigamkarta Ka Vikas or Shikshan Adhigam Parkiriya—*A.K. Verma, Hindi Book Center, New Delhi.*