

---

# UNIT 3 COGNITIVE AND LANGUAGE DEVELOPMENT

---

## Structure

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Cognitive Development : The Concept
- 3.4 Piaget's Concept of Cognitive Development
  - 3.4.1 Underlying Mental Process
  - 3.4.2 Stages of Cognitive Development and Accomplishments
  - 3.4.3 Methodology of Studying Cognitive Developments
  - 3.4.4 Factors Facilitating Cognitive Development
- 3.5 Divergent Thinking
  - 3.5.1 Concept of Divergent Thinking
  - 3.5.2 Dimensions of Creativity
  - 3.5.3 Identification of a Creative Child
  - 3.5.4 Implication for Classroom Teachers
- 3.6 Language Development
  - 3.6.1 Specific Nature and Characteristics of Language Development
  - 3.6.2 Functions of Language
  - 3.6.3 Inter-personal Communication
  - 3.6.4 Problems of Language Development
  - 3.6.5 Implications for Teachers
- 3.7 Implications for Classroom Teachers
  - 3.7.1 Organisation of Teaching-Learning Environment
  - 3.7.2 Problems Related to Cognitive Development
  - 3.7.3 Identification of and Providing Remedies of Cognitive Development Problems
- 3.8 Let Us Sum Up
- 3.9 Unit-end Exercises
- 3.10 Suggested Readings
- 3.11 Answers to Check Your Progress

---

## 3.1 INTRODUCTION

---

In Unit 2 you have gained insights into various developmental aspects viz., physical, social, emotional and moral. As a teacher you are aware that those aspects are crucial indicators of a child's growth and development. In this unit you will study the development of certain intellectual processes viz. cognition, creativity and language.

A discussion on cognitive development will help you understand children's comprehension, underlying mechanisms and methods to facilitate the development of cognition. Divergent thinking deals with the dimensions of creativity and its processes, and the characteristics of creative children.

Similarly language development of children will acquaint you with the specific nature and characteristics of language, inter-personal communication and implications of language development for teachers teaching at the secondary school level. Besides, we discuss the implications of cognitive development for teachers so that they facilitate cognitive development of their students.

---

## 3.2 OBJECTIVES

---

After going through this unit, you will be able to :

- discuss the concept and factors facilitating cognitive development;
- discuss the various stages of cognitive development and related accomplishments at each stage;
- define divergent thinking and its dimensions;
- discuss various dimensions of the creativity process;
- describe the nature, characteristics and problems of language development;
- discuss different types of inter-personal communication mechanisms; and
- discuss the organisation of a teaching-learning environment in accordance with the cognitive needs of children.

---

## 3.3 COGNITIVE DEVELOPMENT : THE CONCEPT

---

Development, as you have studied in Unit 2, is the process of quantitative and qualitative growth of the child and the emergence and differentiation of capabilities over time. It is the function of maturity as well as interaction with the environment.

Cognition means to perceive, comprehend, conceive or simply to know. Cognitive development would then mean the growth and capability of knowing, comprehending, or understanding over time, facilitated both by maturity and interaction with the environment. Cognition involves the ability to construct mental images involving thought, reasoning, memory and language. Mental images are constructed by an individual as the surroundings (the world around) are observed, understood and internalised as a mental process. Thus every individual has a unique model based on a unique process of observation. This is how a learner learns about the world around him/her.

According to Burner, cognitive development occurs in three phases-enactive (doing), ikonic (object models of pictures) and symbolic (signs and symbols). For instance, for a young child cognising what an apple means would be touching or holding or tasting it (enactive mode), later as he grows up seeing pictures of it or a model of it (ikonic model), and still later gradually deciphering the word "apple" (symbolic mode).

---

## 3.4 PIAGET'S CONCEPT OF COGNITIVE DEVELOPMENT

---

Jean Piaget offers a rich framework for conceptualising the development of the child's thinking and cognition during the span of his growing/development to an adult. To him, cognitive development means how knowledge is acquired and developed through successive stages and at various age levels. Hence his theory of cognition is sometimes called **genetic epistemology**. It focuses attention on the interaction between his biological inheritance and his environment for cognitive development.

### 3.4.1 Underlying Mental Process

In order to progress further into Piaget's cognitive development processes, we could cognize or understand the fact that all cognition takes place due to two processes :

- Assimilation which means taking in or absorbing stimuli/information from the environment, and
- Accommodation which means making room for or adjusting to incoming stimuli/information.

These twin processes together facilitate adaptation. Adaptation is an ongoing process which helps the individual internalise or store in all that one comprehends. This then, forms schemes or mental representations or maps of the world.

All learning is adaptive as an infant learns to cry when hungry, or an adult learns to speak a

native language in a foreign land. All these have adaptive value. In Unit 10, Section 10.5.3, you will read about the schema, equilibration, assimilation, adaptation and accommodation.

### Check Your Progress 1

Notes : a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

i) Fill in the blanks:

- a) Cognition means .....
- b) Accommodation which means .....
- c) Cognitive development is a product of interaction between .....  
and .....

ii) Cognitive development according to Burner occurs in three phases. List them.

.....

.....

.....

### 3.4.2 Stages of Cognitive Development and Accomplishments

You will read the stages of cognitive development in detail in Unit 10, Sub-section 10.5.3. The table below shows the major accomplishments at each stage of development.

Stage-age	Type of thinking	Major accomplishments
Sensori-motor stage (0 – 2 years)	Sensori-motor	Pre-verbal Repetition of movements Tribal/Error behaviour. Emergence of goal directed behaviour. Object permanence. Animism.
Pre-operational stage (2 – 7 years)	Transductive thought Intuitive thought	Egocentrism. Imitation. Perceptual reasoning. Imaginary play. Centration. Inconsistent casual reasoning.
Concrete operations stage (7 – 11 years)	Inductive thought	Decentration Diminished ego-centrism, Explanation Conserves, Seriates etc. Makes, Transformations. Classifies. Fantasizes, etc.
Formal operations stage (11 onwards)	Deductive thought	Applies logic. Infers. Verbal hypothesis. Idealistic thinking. Collaboration with others. Proportionality probabilistic and combinatorial reasoning. Casual relations.

Early in life (0 – 2 years) the child learns by touching and sensing. You must have observed little babies holding the objects of their attention and putting it in their mouth. This is a stage called sensori-motor stage. As the child grows he develops some amount of reasoning. He tends to imitate in order to learn, though he himself is the centre of all attention. This is the pre-operational stage.

At the concrete operational stage the child learns enough to make transformations in what he observes. His imagination power moves to propel him to the formal operational stage. At this stage he can apply logic to hypothesize to build relationships and to infer from the relationship.

### 3.4.3 Methodology of Studying Cognitive Development

Piaget's method of studying cognition is a one-to-one verbal interactive, inquiry-oriented method, popularly known as the **clinical method**. Certain mental-operation tasks, in accordance with age and stage of development with supporting material, are prepared. For example, a typical Piaget task on probabilistic reasoning for a 14-year-old student is given below:

**Purpose of the task :** To assess the child's comprehension of probability.

**Materials :** 96 one-inch wooden blocks of 4 different colours (36 red, 36 blue, 20 yellow and 4 green), a paper bag, a box.

**Procedure :** Separate blocks into four colour groups, divide each colour group into half. Give one half to the child and instruct him to put them in the paper bag or box. Keep the other half in front of the child as a reference set.

The teacher says, "I will pull out two blocks out of the bag without looking at them. Could you guess the colour that will come out?"

The procedure is continued till all the blocks are pulled out and the teacher keeps asking, "Why do you think it will be red?" and so on in order to assess the reasoning of the child. Note the justifications given and also note the strategy the child uses for predicting. Intermittently, the teacher uses counter-suggestions such as, "I think the next two would be yellow and blue (low probability colours), what do you think? Transfer of tasks related to probabilistic reasoning are taken up if the teacher is sure that the existence of cognition is based on logic and one could further assess its wider application through transfer.

#### Criteria for assessment

In order to assess a specific level of reasoning, the student should be able to :

- make the correct judgement
- logically justify that judgement
- successfully resist a counter-suggestion
- provide a successful performance on a related task (Strauss, 1972).

### 3.4.4 Factors Facilitating Cognitive Development

Factors facilitating cognition are internal readiness, environmental experiences, social experience and equilibration.

For Piaget and other cognitivists such as Wadsworth, Flavell, Sullivan, etc., the important thing is interactions and equilibration. The key to cognitive development as it relates to educational practice is the activity of the students, their actions on objects, events and other people. While interaction refers to internal organismic readiness, environmental experience is obtained through physical experiences or repetition reinforcement, manipulation of things in the environment and logic-mathematical experiences. Social interaction relates to cognition through interactive modes with people where one learns about relationships, concepts, namely cooperation, competition, cultural mores and practices, etc. Language is the medium of social experiences (verbal and non-verbal). Equilibration refers to a self-regulatory process and assimilation and adaptation where a balance is struck and a new cognition takes place or a new schema comes into being.

#### Check Your Progress 2

**Notes :** a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

i) List four factors that facilitate cognitive development.

.....

.....

.....

.....

.....

ii) Fill in the blanks:

- a) A fifteen years old student is said to be at the .....stage of thinking.
- b) .....type of reasoning characterises a fourteen years old child.
- c) Some of the mental operation tasks are ..... and .....
- d) ..... method is one to one, and an interactive process.

### 3.5 DIVERGENT THINKING

Divergent thinking or lateral thinking is the essence of cognitive development. In Section 3.4 you have read about the concept of cognitive development. Take this example: what is the opposite of the word bright? Dark is an acceptable answer. Now consider another situation, what is the opposite of a cupboard? Or what ideas come to your mind when you think of sunset? The answers to these questions are not straight jacketed. They may be unlimited, with varying degrees of acceptability. This is the essence of divergent or lateral thinking which means to think in unusual, novel and unique ways.

#### 3.5.1 Concept of Divergent Thinking

In divergent thinking, we think in different directions, sometimes searching what, and sometimes seeking variety. Lateral thinking is another expression used for divergent thinking. It means an original line of enquiry. Creativity or divergent thinking can be identified with openness in expressing feelings, receptivity to ideas, concern for others, desire to grow as a person and actualise one's potentials.

Hence creativity is the playful exploration of thoughts by a person who is open, curious and imaginative.

#### 3.5.2 Dimensions of Creativity

Creativity is related to divergent thinking. Therefore, creativity is a multi-dimensional concept. We discuss here the main dimensions of the creative behaviour of a student. This will help you understand creativity better by developing an insight into the nature of creativity and divergent thinking. You will study about creativity in Section 5.6 of Unit 5 of Block 2 also.

A child with the following characteristic dimensions gives more evidence of divergent or creative thinking than others :

- i) Fluency : Ability to manage successfully when a number of ideas are sought. It is the total number of relevant responses given by an individual to a given stimulus.  
 Example : In how many ways can you use a brick, a chair, a toothbrush, etc.? In how many ways can you earn money?  
 Scoring : Count the number of ideas produced in each case; their total is your fluency score.
- ii) Flexibility : The ability to shift your frame of reference and think of varying alternatives. It is the capacity of an individual to use different approaches in responding to a stimulus.  
 Example : List five different factors you would bear in mind when you opt for a career.  
 Scoring : Each new multiple criterion gets a score. The more the alternative criteria, the more the flexibility score.

- |                  |   |   |
|------------------|---|---|
| iii) Originality | : | The production of novel, unusual ideas which are also useful, relevant and apt. It is the capacity of an individual to give original responses to a stimulus. |
| Example          | : | Form a figure using these lines or use the words rough, smooth, fault, and vault and make a poem.   |
| Scoring          | : | The idea which is novel, unique and relevant gets a score.  |
| iv) Elaboration  | : | The ability to generate various alternatives (details) that implement or spell out an idea.   |
| Example          | : | Sarah put her foot on the 10 foot long snake.   |
| Scoring          | : | Varied details that have facilitated or elaborated get a score.   |

### 3.5.3 Identification of a Creative Child

To some extent every child has the capacity of creative behaviour but some have specific creativity in some areas such as science, artistic contribution, etc. It is, however, a difficult task to identify a creative child. For this, you have to identify the characteristics of creativity or divergent thinking. The following are the major characteristics you may like to look for in your students :

- original thought, expression, action and behaviour
- ask uncomfortable questions at times
- persists/argues for his or her point of view
- proposes alternatives to solutions
- displays a high degree of risk-taking behaviour
- self-concept is high, tends to be more anxious and possesses a greater degree of need for achievement
- more tolerant of ambiguity, and
- curiosity/independent judgement and exhibits more autonomy.

### 3.5.4 Implication for Classroom Teachers

The teacher can provide certain conditions which will increase the fluency, flexibility, originality and exploration of the students thinking/behaviour. The following are the important conditions which can foster students' creativity.

- Pose open-ended, divergent questions with the focus on alternative responses and novelty, and not on right or wrong.
- Excessive discipline, reliance on text books, emphasis on rote learning or criticising students for wrong answers reduce their creative potential.
- Encourage children to experiment, innovate, discover, hypothesise or imagine possible solutions to any pressing issue.
- Develop a spirit of inquiry, tolerate uncertainty; help to speculate, cultivate a deliberate pace of thinking, etc.
- Adopt a multi-disciplinary approach to teaching.
- Create a supportive environment.
- Appreciate students' creative efforts.
- Assign/suggest activities of an inter-disciplinary nature.
- Use teaching aids that stimulate imagination.
- Resist from premature evaluation.

**Check Your Progress 3**

Notes : a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

i) What is divergent thinking ?

.....

.....

.....

.....

ii) List four dimensions of creativity.

.....

.....

.....

.....

iii) Identify the characteristics of students who you think have a creative mind.

.....

.....

.....

.....

### 3.6 LANGUAGE DEVELOPMENT

It is assumed that every living being has its language. But all of them cannot communicate like humanbeings. The language of humanbeings has certain characteristics which give a definite meaning to their communication. We can talk about the past, the present and the future with the help of language.

Language development and its usage both verbal and non-verbal is universal and central to human existence. Language functions as a means of communication, as a means of reflecting on and reorganising experience, and as a way to receive and transform the accumulated knowledge and values of the community.

#### 3.6.1 Specific Nature and Characteristics of Language Development

All except those who are severely impaired develop their language in similar ways, though at varying rates. In such cases the maturity of the child plays an important role.

Details of language and how it is used is influenced to a large extent by experience (the role of the environment). Much of language is learned through socialisation. Bernstein (1971) differentiates varying language development and communication systems between children belonging to **positional families** where communication is closed and children are seen and not heard so much, and those belonging to **person-centred families** who have more open communication and their language develops with ease.

According to Chomsky (1968), language development is the result of the progressive gain of maturity — the unfolding of the child's genetic capability for language. Chomsky's (1976) model of language development attributed an innate understanding of fundamental rules, which get activated by the language the child hears and accounts for the speed and regularity of development.

Weil (1985) presents a universal sequence of developing language. His finding is that infrequent use of certain language items emerge in the sequence in a delayed manner. For example, Mother-Ma-Amma is uttered early in the sequence than Master, etc.

Imitation and contingent conversation seems to develop children linguistically and cognitively as well (Wood, 1980; Tissard and Huges, 1984).

**Characteristics of language development :** The following are the characteristics of language development :

- **Semanticity :** The quality of language in which words are used as symbols for objects, events or ideas.
- **Syntax :** The rules in a language for placing words in proper order to form meaningful sentences.
- **Productivity :** The capacity to combine words into original sentences.
- **Displacement :** The quality of language that makes one communicate information about objects and events in another time and place. Language makes possible the efficient transmission of large amounts of complex knowledge from one person to another, and from one generation to another. Displacement permits parents to warn children of their own mistakes. Displacement allows children to tell their parents what they did in school.

### 3.6.2 Functions of Language

Language performs a number of functions based on the purpose of its use. Language with a functional purpose is illustrated by Michael Halliday as follows :

**Instrumental :** Language performs an instrumental function the way an individual satisfies the need by asking for something (May I drink some water?).

**Regulatory :** It performs a regulatory function controlling another's behaviour (e.g. Teacher asks the student, "Stay quiet, please").

**Interactional :** It performs an interactional function-used for maintaining interpersonal (eg. wishing a friend a happy birthday).

**Personal :** Language performs a personal function — where one talks about oneself (e.g. I am feeling very elated today).

**Heuristic :** It performs a heuristic function to find out about the world in general (e.g. Is there a drug to cure AIDS?).

**Imaginative :** It performs an imaginative function where one talks about one's imagination (e.g. write an essay on the topic "you are on the clouds").

**Informational :** It also performs an informational function — to seek and give varied types of information (e.g. What is the current rate of population growth in our country ?).

#### Language and culture

Language helps children learn habits, traditions, religions and customs of their culture. It is a carrier of one's culture. Every culture defines what to say, when and to whom, just as it dictates pronunciation, syntax and vocabulary. In culture where politeness is valued, for example, children learn polite forms of expression at a very early age. Sometimes children have to cope with the demands of two different cultures at the same time. Children whose sole language has been the mother tongue are at a great disadvantage in those public schools which do not recognise the mother tongue as a legitimate dialect and teach classes in the standard language. These children may have difficulties in school. At home their speech is monitored by their parents for the proper expression of respect and familiarity, but at school it is monitored by their teachers for its analytical and problem solving qualities.

### 3.6.3 Interpersonal Communication

In the preceding sub-section, you read that one of the functions of language is to maintain interaction with people. This would mean an interface of one to one, or one to many, as between a teacher and students or a teacher with parents, etc. Interpersonal communication is the basis for developing interpersonal relationships. They may involve mutual exchange of information based on mutual contact either directly through speech or indirectly through the written medium. Various Schools of Psychology have explained interpersonal communication with different emphasis.



The following conversation between the teacher and the student illustrates interpersonal communication.

Student :	What is the time ?	}	complementary transaction
Teacher :	It is 9 a.m.		
Student :	What is the time?	}	crossed transaction
Teacher :	Can't you read it?		
Student :	What is the time?	}	ulterior transaction
Teacher :	Look ! Who is asking for the time?		

As indicated, interpersonal communication breaks down when there is too much of crossed or ulterior type of transaction. For positive/healthy interpersonal communication, the teacher needs to use and also facilitate in the student the development of complementary transactions.

### 3.6.4 Problems of Language Development

Children develop language skills through socialisation. School is a socialising agency where children learn their language. But all children are not in equal their language ability. Some children face problems in this regard. The main problems of language development faced by children are presented as follows :

- Lack of initial listening and speaking opportunities.
- Inability to express through the spoken or written medium.
- Blocks due to genetic impairment of emotional problems of an impoverished environment.
- Ambiguities in comprehension such as phonological, lexical or deep structural ambiguities, etc.
- Inadequate cognition of word meanings.
- Poor concept development.
- Over emphasis on writing prematurely.

### 3.6.5 Implications for Teachers

The effective teacher should be aware of the problems faced by students in the classroom. He should create a homely environment in his class where students feel free to express and share their feelings, opinions and viewpoints with their teacher. Such an environment will facilitate the acquisition of language competency.

- Language is learned and developed in a social context for functional purposes.
- For older children, one should provide ample scope to develop listening, speaking, reading and writing skills.
- One should create settings where language may be used for various purposes.
- One should be cognisant of multilingual interferences, identify them and provide remedies.
- One should encourage students creative efforts.
- One should de-emphasise excessive writing or rote repetition, provide a relaxed environment for free expression of ideas, thoughts and feelings, provide structural and semi-structural setting to express verbal and non-verbal ideas, organise debates, class discussions and displays, etc.
- One should help students develop early reading habits and enable them to do book reviews.

#### Check Your Progress 4

Notes : a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the unit.

a) List the four characteristics of language development.

.....

.....

.....

.....

b) What are the functions of language development? Write two functions in detail.

.....

.....

.....

### 3.7 IMPLICATIONS FOR CLASSROOM TEACHERS

In the preceding section, we have discussed cognitive development in detail. You, as a teacher, should now be able to discuss how to apply this knowledge in your classroom. The following points shall help you implement what you have learned already.

- Logical thought precedes language. Language is an expression or vehicle of thought. Hence a teacher needs to listen and interpret students' thinking coherently and facilitate apt articulation.
- Learning is an active process because knowledge is constructed with learner's support.
- Social interactions among students are vital. Hence more group activities, debates, deliberations, etc., are to be organised.
- The teacher's emphasis should be on the developmental process such as classification, hypothesising, predicting, etc., and not on rote mastering of content.

#### 3.7.1 Organisation of Teaching-Learning Environment

The responsibility of children's failure to learn lies with the teacher and not with the content. Curriculum organisation and planning is based on appropriateness to the studying of cognitive development and its accomplishments. To make the curriculum relevant to the learner the teacher needs to consider the integration of various aspects of cognitive development. The learning material should be selected in order to project varied meaning to the material, e.g., scales, measuring tapes, containers, chemicals, floating/sinking objects, etc.

#### 3.7.2 Problems Related to Cognitive Development

Cognitive development may be adversely affected or retarded due to the following factors :

- Deficiency in the learner characteristics (genetic or poor environmental stimulation). This may be expressed in the ability to comprehend, poor skills, lack of persistence, etc.
- Cognitive problems would arise due to poor attention, assimilation, observation, inference, discovery, lack of opportunity for relational work, etc.
- The nature of the material used in terms of their physical structure and composition, inappropriateness, conceptual difficulty, sequencing, etc., may pose problems.
- The nature of the student may lack in imitation, recall, recognition, problem solving and creativity.

#### 3.7.3 Identification of and Providing Remedies of Cognitive Development Problems

The identification of problems related to cognitive development needs careful observation on the repeated performance of the students' verbal and non-verbal output. The behaviour of older

children in seeking interaction verbally would enable a teacher to exactly identify the nature of the problem of their cognitive development. Typically a teacher could ask, "Why do you say so? How do you justify that? If you do this, then what do you think will happen?" On the basis of diagnosis, you can suggest remedial measures. You can

- provide ample scope for questioning, justifying and reasoning
- give adequate verbal and non-verbal cues to facilitate cognition
- support cognition by giving a number of examples and transfer of learning tasks
- facilitate peer and social interactions
- encourage minor cognitive efforts.

---

### 3.8 LET US SUM UP

---

In this unit you have studied the concept of cognition and the contribution of Piaget to understanding cognition and cognitive development. The age/stage cognitive development processes with their underlined mental abilities and accomplishment are critical indicators for teacher-practitioners. The complex nature of cognitive development and application of the Piagetian concept to educational practice have been delineated with examples.

Creativity in terms of divergent and lateral thinking has been discussed. Varied creative dimensions such as fluency, flexibility, originality, elaboration, etc., have been discussed with examples. Some characteristics which are manifest in a creative child such as curiosity, persistence, original thinking, etc., are indicators of creative potential. The reasons why a child gets blocked in creative processes are also presented.

We have also discussed the issues related to language development. Language is a means of communication and a preserver and transmitter of culture. It serves various functions, such as personal, regulatory, heuristic, imaginative, etc. Interpersonal communication with reference to the types of transactions has been explained with the help of illustrative examples. Lastly, the problems of language development and implications of language development for teachers have also been covered.

---

### 3.9 UNIT-END EXERCISES

---

1. Construct a cognitive development task for a 14-year-old child on the classification concept of metallic and non-metallic materials. Some materials you may use (choose your own criteria) are erasers, pieces of chalk, wooden blocks, bottle caps, iron fillings, plastic lids, paper clips, mica, limestone, etc.
2. Devise exercises to develop the following creativity dimensions in your class children. Establish a scoring criteria fluency, originality, flexibility, originality which reflect the characteristics of these periods.

---

### 3.10 SUGGESTED READINGS

---

Elliott, A.J. (1981) : *Child Language*, Cambridge University Press.

Joyce, Bruce and Weil, Marsha (1985) : *Model of Teaching*, Prentice Hall of India Pvt. Ltd., New Delhi.

Khandwala, P. (1984) : *IV Eye*, A. H. Wheeler & Co. Pvt. Ltd.

Piaget J. (1958) : *The Growth of Logical Thinking From Childhood to Adolescence*, Basic Books, New York.

Sprinthall, C. Richard and Sprinthall, A. Norman (1990) : *Educational Psychology : A Development Approach*, McGraw Hill Publishing Company, New York.

Weils, C. G. (1982) : *Language Learning and Education*, Centre for Study of Language and Communication, University of Bristol, U.S.A.

### 3.11 ANSWERS TO CHECK YOUR PROGRESS

1.
  - i)
    - a) Enactive (doing)
    - b) Ikonik (object, models or pictures)
    - c) Symbolic (signs and symbols)
  - ii)
    - a) to perceive, apprehend, comprehend, conceive or simply to know.
    - b) making room for or adjusting to incoming stimuli/infromation.
    - c) maturation and environment.
2.
  - i)
    - a) internal readiness
    - b) environmental experiences
    - c) social experience
    - d) equilibration
  - ii)
    - a) Formal operation stage.
    - b) probabilistic
    - c) age and stage of development
    - d) inquiry-oriented method
3.
  - i) Divergent thinking can be identified with openness in expressing feelings, receptivity to ideas, concern for others, desire to grow as a person and actualise one's potential.
  - ii)
    - a) Fluency
    - b) Flexibility
    - c) Originality
    - d) Elaboration
  - iii)
    - Original thought, expression, action and behaviour;
    - asks uncomfortable question at times ;
    - persists/argues for his or her point of view;
    - proposes alternatives to solutions;
    - displays a high degree of risk-taking behaviour;
    - self-concept is high, tends to be more anxious and possesses a greater degree of the need for achievement;
    - more tolerant of ambiguity; and
    - curiosity/independent judgement and exhibits more autonomy.
4.
  - a) semanticity, syntax, productivity, displacement.
  - b) instrumental regulatory, interactional, personal, heuristic, imaginative, informational.

Personal : Language performs personal functions where one talks about oneself.

Heuristic : It performs heuristic function to find out about the world in general.