

# *Profiling the Indian College Student*

# 1

## *Introduction*

The Spartans exposed their younger generation to physical stress in order to toughen their society while the Israelis have made conscription compulsory, for all adult members of their country. All civilized societies seek to instil truth and goodness in their young ones, indicating that the youth is the future of a country. Our young adults are the backbone of society for they act as agents of change and are responsible for restructuring the societal norms, conventions, traditions and practices, thereby making them our most valuable assets. Our college students also belong to this developmental category of young adulthood. Let us, in the present unit, try to get an understanding of their psychological characteristics, their world of experience and the challenges which they face within the individual – society dynamic in which they live.

## *Learning outcomes*

After studying this unit, you will be able to:

- understand the different characteristics of the Indian College Student;
- develop an insight into the problems and challenges faced by them;
- understand the role of society in shaping them;
- appreciate the theoretical perspectives underlying this stage;
- explain the concept, need and relevance of family life education for them.

## *The Indian college student: characteristics and psychological world*

Different cultures have different ages in which children reach the adult status. Contrary to the older times when adult status was synonymous with puberty or physical development, today, an individual is legally said to have become an adult at the age of eighteen years. This is also the age at which, in India and the world over, an individual crosses the threshold of adolescence and enters into young adulthood. It is a major transition which is fraught with challenges. The reality that, he is not an adolescent any more, but is on his journey towards mature adulthood becomes his psychological pre-occupation. Young adulthood is a period of adjustments to new patterns of life and new social expectations. The young adult is expected to play new roles - such as that of spouse, parent or bread winner and to develop attitudes, interests

and values in keeping with these roles, making this period especially distinctive and difficult. In Indian society, passing out of high school and stepping into College, reflects the onset of young adulthood. The stage persists for a couple of years and is marked by a number of developmental hallmarks. Let us take a look at them.

***It is a period of social and emotional stress***

Young adulthood per se, is a period of social and emotional stress, as individuals are constantly searching for their sense of identity, trying to carve out a niche for themselves in society, grappling with complex demands such as their body image and sexual needs, career and employment pressures and their interpersonal relationships. This is especially true for a developing society like India, where torn between tradition and modernity, young adults experience a number of social and emotional challenges. These are more so in urban Indian society.

***It is a time for commitments***

As young adults change their role from dependent adolescents, they establish new patterns of living, assume new responsibilities and make new commitments, which form the basis for their future life. For instance, commitment to a vocation, or a cause which has a long term goal, are typically seen.

***It is a time for value change***

Many of the values developed during childhood and adolescence change during young adulthood, since experience and social contact with persons of different backgrounds and age groups, broaden. Values are considered from a more mature and allocentric standpoint now and cease to be governed by uncritical acceptance which may have existed earlier.

***It is a time for adjustment to a new lifestyle***

Of the many adjustments which young adults are expected to make to new lifestyles, the most common are adjustments to egalitarian sex roles rather than traditional ones, new values, the existential dilemma of choice (choosing a career, choosing a mate etc) and changes in interests, goals and aspirations. How well these issues are resolved and suitable adaptations are made, will influence the degree of success an individual experiences and how well adjusted and happy he/she becomes later in life.

**Self-assessment**

1. Interview a few College students about their problems, difficulties, worries and concerns both in the present context and regarding the future. Match your findings with the issues discussed above.

***Understanding young adults: some theoretical views***

Since the characteristics of young adulthood have already been discussed, in this section you will be acquainted with the significant theoretical orientations to understanding the different facets of development of this stage. The focus will be on trying to enable you to understanding the cognitive, socio-emotional and moral domains of personality, as have been articulated by psychologists working in the field.

***Cognitive aspect***

As individuals embark upon this stage, their cognitive abilities increase manifold. According to Piaget's theory, they are in the formal operational stage of cognitive development, characterised by hypothetico - deductive thinking, abstraction and mature forms of logical reasoning. The young adult is capable of synthesising information,

reflecting upon it after due analysis and presenting a judgement or a perspective on it. In fact, it is because of these skills and abilities that young adults often engage in critical and evaluative thinking. Also, they don't accept rules, norms and standards unless they are convinced about their utility and relevance. Their cognitive abilities further the processes of decision making, goal planning, strategising of their lives and moving steadily with a sense of direction towards their future. A number of the activities like playing strategy-based games like chess, participating in quizzes, solving crosswords, analysing films, reading a range of books, surfing on the internet, etc., which young adults are found to engage in, stem from the cognitive potential which they have. Needless to say, language, expression and communication skills keep expanding as does their realm of experiences. Because of this young adults are able to function with a fair amount of competence and autonomy.

### *Socio-emotional aspect*

In the socio-emotional domain, theorists like Erikson emphasise that the development of identity which was the most significant psychological preoccupation for the adolescent, continues through young adulthood. In this search for identity, the young adult seeks to find a meaningful answer to the question of "Who am I?" This question while it seems very simple and straightforward at a surface level, is actually very complicated and difficult to resolve at a deeper level, since it involves a synthesis of one's needs, experiences and future goals. The question of Who am I, subsumes resolution of "What am I? How am I?" "Where am I?" and "Where do I want to be?" Answers to these questions lie in developing a sense of gender identity, making career choices, evaluating one's self image and self concept, experiencing a sense of autonomy, crystallising one's values, formulating one's goals and aspirations and deciding upon a satisfying life-style, based on a suitably worked out philosophy of life. None of these are easy tasks and young adults are often seen to be in a state of psychological moratorium and flux in their quest to find answers. For some young adults, a sense of identity is achieved through the principle of foreclosure, in which the young person is guided entirely by societal expectations in finding answers to the identity question. In the case of some others, identity achievement based on mature cognitive analysis and understanding of personal experiences, may also occur. This is the optimal approach to identity achievement. Another developmental expectation or ego conflict as Erikson chooses to call it, is in the area of the young adult's inter personal relationships. This is the stage of 'intimacy versus isolation', in which the young person faces the pressure of bonding intimately with a few soul mates who may be friends, one's spouse, teacher, parent, etc. The need for this close, intimate relationship is very strong. There is a discernable movement away from having too many friends and acquaintances. What is greatly valued is intimacy with a few. You must have noticed this among your students. They typically operate in small cliques, rather than large groups. Those who develop intimacy relationships which they value, always exhibit a sense of satisfaction and happiness, while at the other end, failure to do so leads to feelings of loneliness and isolation.

### *Moral aspect*

Earlier in the unit, it was pointed out that young adults undergo a change in their value system by redefining and restructuring it in accordance with the individual values that they have internalised. This is because they have reached a level of post conventional morality, as described by Lawrence Kohlberg and are in a position to abide by self-chosen ethical principles. Post conventional morality is characterised by the ability to display moral courage, take moral responsibility and formulate one's own code of conduct and ethics based on what one deems is correct. Prior to this, young children and adolescents seem to be guided by a prescriptive form of morality, wherein their moral behavior governed by the strictures and injunctions which their parents, teachers and

other significant adults transmit to them. In a sense they are continually striving to be "good girls and nice-boys", as is upheld by their society. The stage of youth and young adulthood often marks a departure from this, since now, the young person has a well developed conscience, a sense of right and wrong and a set of values, which for him are far more significant than 'being good', as society describes it. You may have observed that many college students question certain societal norms, standards and expectations and try their best to initiate changes in what they consider redundant social beliefs and practices. Even in college matters, they form thinking groups, societies, etc., where they envision and strategise the changes which they are planning. In their definition of morality, principles, ethics, altruism and larger societal concerns become more prominent, which they also integrate into their personal value systems.

### *Personality development as a function of socio-cultural factors*

Social learning theorists like Bandura and Walter Mischel emphasise the role of culture and environment in mediating personality development. They attempt to explain a person's acquisition of thoughts, feelings and actions to observation and imitation of role models and vicarious learning. This is evident from their body image, mannerisms and overt behavioural manifestations. The way they dress, wear their hair, walk, talk, pursue recreational activities etc, in particular, appear to be derived from role models, which may be indigenous or western. These role models are usually sports stars, film stars, television stars, successful models, businessmen and other professionals. Vicarious learning is at its peak. Since, most of the young adults' friends and associates are undergoing the same problems, challenges and dilemmas, there is thus much to learn from others' experiences.

In understanding personality development, Meadian philosophy (Margrat Mead, 1950) which propounds cultural relativism or being centred in cultural mores, norms and values which differ from culture to culture, being chiefly responsible for an individual's development across stages is extremely significant. Probably, this also serves to explain why in our own country the variations in young adults across regions, states, caste, class and gender are so prominent, in spite of their developmental challenges being common. The explanation clearly lies in the cultural contextualization or what Mead called the cultural relativism approach. Each young adult gets the meaning of his/her existence from the background which he or she belongs to and also strives to develop a personality, consonant with that background.

The constituents of the institution called culture are clearly represented and defined by Bronfenbrenner's ecological model. Study the model given below and see what inferences you can draw from it.

You must have inferred that all individuals develop within the multiple social contexts of their families, communities, religious groups and even countries. They are influenced by peers, relatives, schools and interest groups to which they belong. Media, world events, and national leaders also play an important role in shaping their personalities. Cultural learning is transmitted by them. The individual's personality is thus greatly influenced by socializing agents in his/her psychosocial environment.

In fact, in Bronfenbrenner's model, the dynamic and interdependent relationship between the individual and his/her environment emerges very clearly. Also, the primary socializing agents and the secondary ones in a person's context, can be understood.

Having gone through this section, you can well understand, that a young person at this stage has to make considerable progress in establishing his identity, sexual orientation and engage in a variety of inter personal relationships. Depending upon the nature of interaction he / she has with his/her environment, this highly dynamic developmental phase can turn into either a period of 'stress and storm' (when the nature of this interaction is non-congenial) or a period characterised by realization of one's potential

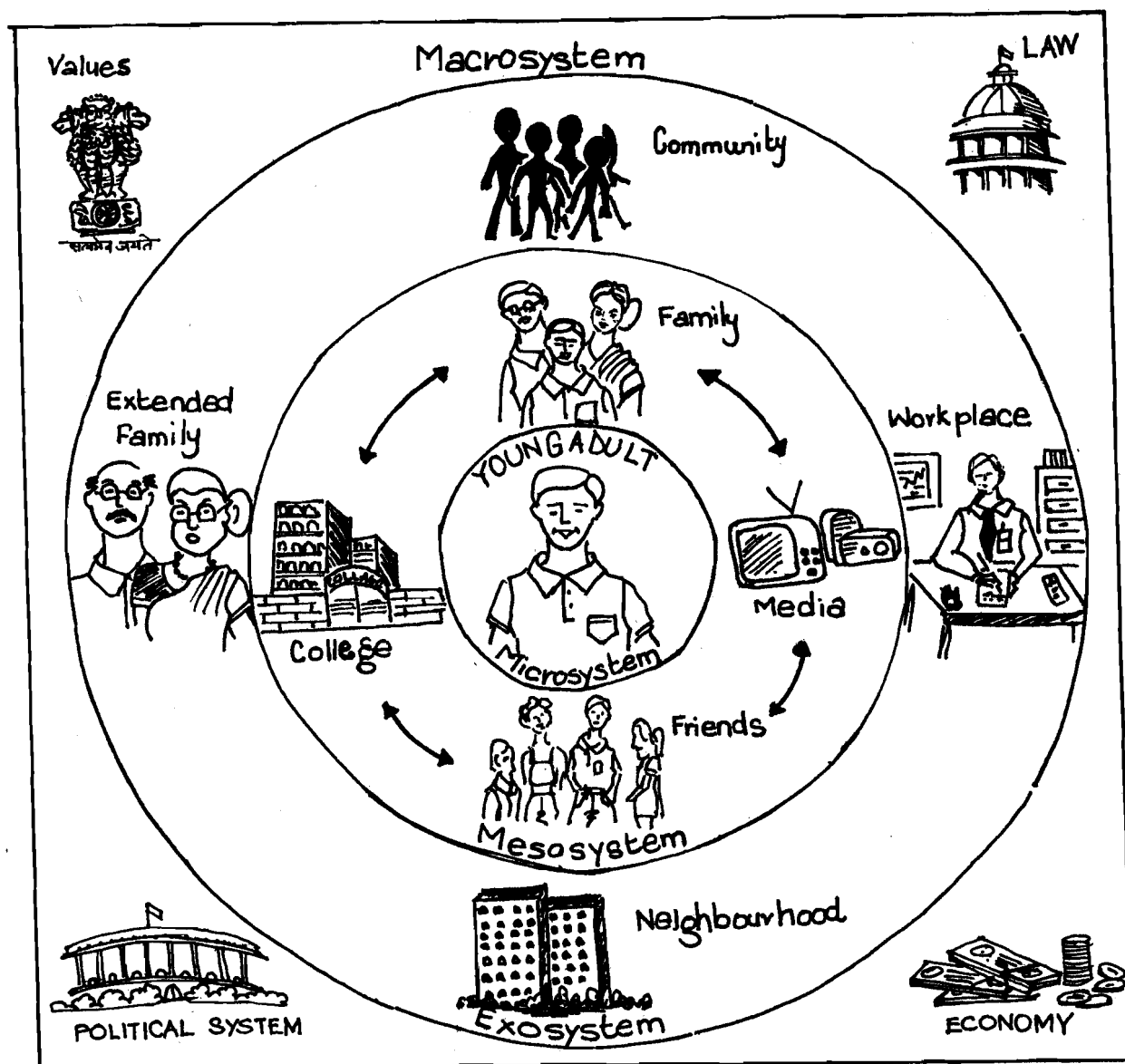


Figure 1

and optimal opportunities, resulting in poor self concept, negative self image and maladjustment in the first case, or positive self concept and sound adjustment in the other.

### *Challenges faced by the Indian college student*

Raj, aged 22 years, is a final year law student in the Faculty of Law, Delhi University. He often wakes up in the middle of the night, worried, wondering if he would get a satisfactory placement. Since he belongs to a middle class family, he will soon be expected to assume the role of the bread winner of the family. Being the eldest of three children, his family looks up to him. They have spent a lot of money on his education. Raj on the recommendation of his friends had indulged in the occasional drink to soothe his nerves in the beginning, whenever he was worried. Lately, he has started drinking a lot. Now he doesn't wake up in the middle of the night to wonder ..... he is too drunk.

The above given case vignette typically describes the various challenges that an Indian college student faces. Living in a developing country like India which is plagued by problems like population explosion, poverty, underemployment urbanization etc., especially in the big cities, creates an environment of insecurity, cut throat competition, rivalry and no guarantees about the future. This is the flavour of the general ethos of the environment in which the young adult in India tries to exist as well as live.

Let us now closely examine some of the challenges faced by the Indian College Student. Read the figure given below and try to visualize the range and enormity of the challenges.

- Achieving emotional Independence from parents and other adults.
- Preparing for a career.
- Preparing for marriage and family life
- Taking on civic responsibilities
- Achieving socially responsible behavior
- Achieving a gender role.
- Achieving more mature interpersonal relationships with peers and others.
- Adapting to new social roles, flexibly
- Finding a congenial social group.
- Developing constructive leisure time activities.

(Adapted from Havighurst's Developmental Tasks, 1972)

**Figure 2 Developmental tasks for the Indian College Student in the 21<sup>st</sup> Century**

None of these challenges are easy to fulfil. They require cognitive, affective and psychomotor abilities and a strong sense of self and identity

#### **Self-assessment**

2. *Observe at least 5 Indian College Students and prepare a checklist to study their behaviors. Compare this checklist with the various characteristics of young adulthood that have been discussed in this section. What do you find?*

We will now discuss some of the developmental tasks and challenges in greater detail.

#### ***Selection of a vocation***

Today, there is evidence that selection of a vocation becomes increasingly difficult for each successive generation of young adults, because of the ever increasing choices and varieties of careers to choose from. The following features in society are also augmenting this difficulty. For instance,

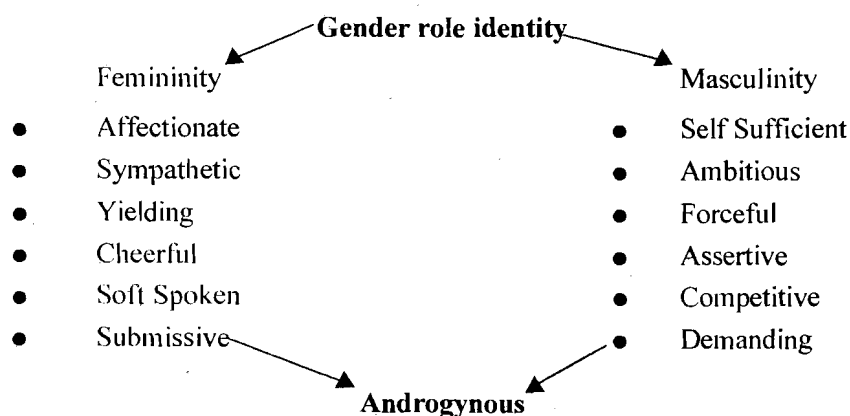
- Specialization and super specialization of tasks owing to the twin processes of globalization and market economies, has happened.
- Long and costly preparations which ensure a long term commitment are warranted.
- Displacement of sexual stereotypes of certain occupations – teaching and nursing as 'women's work' has taken place.
- Lack of security in work because of contractual bonds is a reality.
- Unrealistic expectations of the individual from their employers on account of western role models is also a significant characteristic.
- Poor self appraisal among young adults in making career choices is also a reality.
- Underemployment in a country like India and educated unemployment are economic problems.

In this scenario we see that career choice is becoming more and more difficult. This in turn erodes the individual's sense of self and identity. After all what we do plays a major role in describing who we are. Confronted with this realization, many young people opt for 'psychosocial moratorium' (a period marked by delay of commitment) or endorse their parents' chosen goals and values for them. (foreclosure)

### *Achieving a gender role*

Gender roles are particularly important in the development of identity of young adults because they establish a pattern for many types of behaviors. Fifty years ago, there was no role confusion. The man would function as a breadwinner and the woman would function as a child bearer and a homemaker. But over the last two or three decades in Indian society, the interpretations of gender appropriate behavior have changed dramatically. Now more and more women are entering the workforce. The concept of house husbands is finding acceptance in the cities. Thus, girls traditionally socialized to be submissive and others' oriented, experience a number of dilemmas and conflicts as do boys who are taught to be ambitious and aggressive as part of their patriarchal socialization.

The present ethos in Indian society has ushered in an era of psychological androgyny, which basically refers to possessing a synthesis of both male and female characteristics. This necessitates that parents redefine the process of socialization and induce changes in the existing social order and pattern of gendering of their children. In real terms this may or may not happen. Often, parents and other significant adults adhere rigidly to their own phase of young adulthood and are resistant to change. Indian society, which has historically been male dominated finds itself troubled by the contemporary demands for restructured gender roles and quest for an egalitarian society. In this background, for the young adult, adopting a suitable gender role becomes a matter of great concern. Many trials and tribulations may be faced. Internal conflicts and dilemmas may be generated. The stage however is marked by a gender role commitment which may be either masculine, feminine or androgynous. In some cases, if the element of conflict is too high, an undifferentiated gender identity results.



**Figure 3** Some characteristics regarded as socially appropriate for males and females in India

### *Sexual identity*

The establishment of one's sexual identity begins with pubertal changes and continues into early adulthood. Sexual identity refers to accepting one's body image, dealing appropriately with one's sexuality and ultimately engaging in a meaningful sexual relationship. Acquiring a mature concept of sexuality, is especially challenging in a non-permissive society like India, where sex is considered a taboo. At this stage, apart from physical development, there is social, emotional and psychological re-orientation towards sex, governed by the need for intimacy and emotional bonding. This new

interest which begins to develop when sexual maturation is complete, is often romantic in nature, and is accompanied by a strong desire for approval from the opposite sex (heterosexual tendencies and interest). The path to a firm sense of sexual identity is usually very checkered for young adults. Societal norms and standards are restrictive and rigorous and often model themselves on sexual suppression and isolation. On the other hand, sexual feelings, emotions and desires are generated by physiological processes and hormonal activity and have to be suitably dealt with. So, while there is desire on the one hand, there are strict norms promoting suppression and denial on the other. Very often, young adults get into sexual conflicts and dilemmas and also engage in sexual experimentation outside of marriage. While they tend to rationalize their behavior on the one hand, their approval needs from significant others get thwarted on the other. In some cases, these approval needs take precedence over personal ones, and sexual relationships and encounters are abstained from, before or outside of marriage. Young adults are thus left to vicarious forms of satisfaction or channelisation of their feelings. The path of channelisation may be healthy as when it leads to poetry, music, a piece of art, playing games, reading romantic fiction etc., but it may also be unhealthy if it leads to a pre-occupation with reading pornographic literature, exploring sexual web sites, getting fixated on blue films etc.

### *Stress*

Almost any change in the environment – even a pleasant change like a vacation or marriage demands some coping. Changes in one's life if not suitably adapted to, become stressors. In the case of the young adult, many of the developmental challenges of their stage coupled with societal demands and expectations require coping and adaptation. Research studies have shown that getting admission to a suitable college, entering a desired profession, selection of mate, sexual difficulties, differences with parents, not being able to join a friendship group, discomfiture with personal physical attributes such as height, figure, skin colour and mode of dress, not getting desired freedom etc., are some of the significant stressors in the lives of young adults.

Apart from the stage specific stressors, the young adults in India and the world over have also to deal with the general ethos of uncertainty, doubt, suspicion, cut throat competition and rivalry, exploitation, etc. This adds to the list of life stressors which they have to cope with. Appropriate management of stress, thus becomes a major challenge at this time. These who can cope suitably, emerge with a strong sense of self; for others the converse holds true.

### **Self-assessment**

3. *Identify the different stressors in the life of an Indian College Student. Construct a hierarchy of stressors for the same, beginning from the most stressful to the least stressful. Weave in gender differences, if necessary.*

### *Substance abuse*

Psychologists see overuse of alcohol and other psychoactive substances like tobacco and drugs, as products of neurotic conflict, doubt and anxiety about one's self worth and an attempt to make up for an eroded self concept, mediated by social models and reinforced by the 'escape' they provide and the temporary alleviation of anxiety which they offer. All these factors, coupled with the easy availability of cigarettes, drugs and alcohol and their curiosity to experiment, lands many young adults into an addiction and consequently life long health problems. Substance abuse, especially alcoholism is gaining popularity with the Indian youth, who anyway are more vulnerable because of social, psychological and financially predisposing factors.

### Self-assessment

4. A young man of 20 years in your neighbourhood has taken to drinking. How would you help him in getting rid of this addiction, especially since you know that he is trying to run away from his problems.

### Interpersonal relationships

One of the most significant challenges confronting the young adult is to develop healthy interpersonal relationships with peers, colleagues at work and with family members. Healthy relationships are characterised by an openness of communication, unconditional acceptance and positive regard in which naturalness, spontaneity and empathy are the dominant features. However, these may not be possible in all contexts, situations and with all persons. Young adults have to thus learn to be discerning in their expectations from each of the relationships which they engage in and mould their behavior accordingly. For instance, in college or in the work place, when dealing with one's teachers or boss, social decorum and the institutional culture will greatly influence the nature of relationship. In a family setting in contrast, by and large one can be oneself without fears of rejection – the scope for naturalness and spontaneity is much more. Young adults have to thus imbibe the qualities which typify healthy interpersonal relationships, on the one hand, but also realise and accept that relationships will tend to vary across persons, situations and contexts, on the other.

### Search for the self

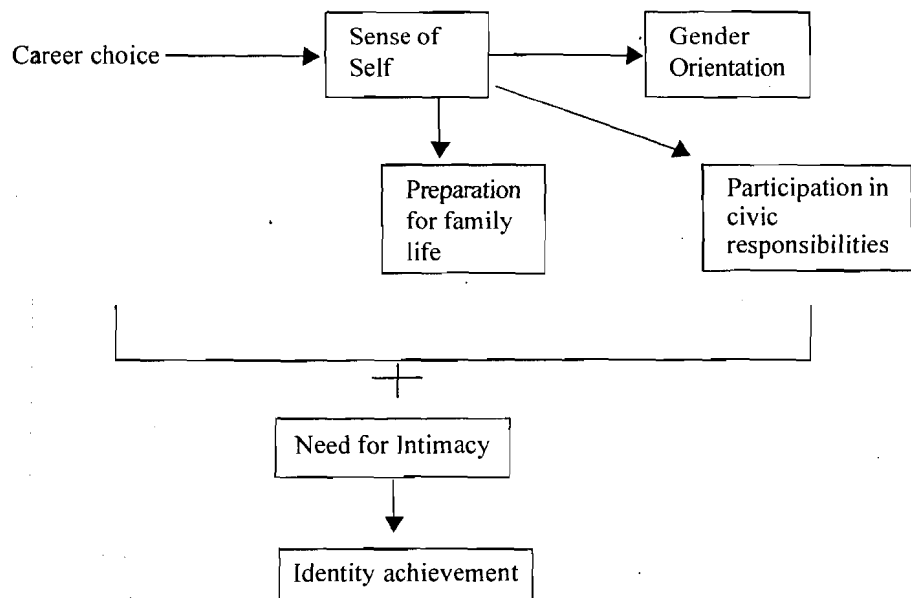
More than at any other time of life at this stage, it is important for young people to affirm and establish their convictions related to their identity. They must find their sense of self. Self is the sum total of a person's ideas and attitudes about who and what he is. It includes the person's self image, self concept and self-esteem and provides a sense of continuity to the past, present and future of the individual. The sense of self starts evolving in childhood and shows considerable stability in adulthood. For the young adult, self is a state of being and becoming. During young adulthood, identity achievement greatly supports the search for self. Those persons who have a mature sense of identity, usually show a strong sense of self. Those who remain in a state of moratorium with respect to their identity, will tend to show the same with respect to 'self'. During young adulthood, the search for self involves knowing one's attitudes, feelings, values, beliefs etc., on the one hand, but also the ideals which one wants to pursue, which may be called the ideal self on the other. Being and striving to become are both, equally, important.

Stage	Self related Dichotomy (Ego conflict)
1. Infancy:	Trust vs mistrust
2. Early childhood:	Autonomy v/s Shame and Doubt
3. Play age:	Initiative v/s Guilt
4. School age:	Industry v/s Inferiority
5. Adolescence:	Identity achievement v/s Role confusion
6. Young adulthood:	Intimacy v/s Isolation
7. Adulthood + Middle Years:	Generativity v/s Stagnation
8. Old age:	Ego Integrity v/s Despair

**Figure 4 A Psychosocial view of the developmental stages: where 'ego' or self is involved**

Source : Erik Erikson's theory.

From the eight stages in the human life span presented above, you will realize that the search for self is always located in the developmental challenges typifying a particular stage. The dichotomous possibilities for its resolution are given. However, the individual may be seen to lie at any point along this continuum of dichotomous possibilities.



**Figure 5 Pathway for identity achievement**

### *Role of a society in shaping the young adult*

Young adulthood is an extremely important developmental stage akin to a double edged sword. It can either be moulded into a great asset and generate future leaders for the country, or can be rendered into a completely frightening and deviant phase which is a liability for the country. Today, we see so much of youth unrest, the crime rate has gone up ruthlessly, exploitation exists and most unfortunately, many of the youth of our country who should be the propelling forces of our progress, are directionless, embody superficial values and lead lives full of crime and delinquency. Where are we going wrong? As a society, we need to take stock of the situation, be proactive and take preventive measures to safeguard our youngsters. Globalization has opened up the gates to economic prosperity and urbanization on the one hand, but has brought competition and greed for materialism on the other. The great "Indian collectivism" is being replaced by "self absorbed individualism", drastically altering our needs and values. Changes in family structures to suit socio-economic needs have made individuals more and more alienated and estranged. The effects of social disorganisation, reflected in slums, poor quality schools, exploitation, crime, etc. are a major cause for influencing the Indian youth negatively and making them destructive. The community cultural perspective emphasised by community psychologists views the problems faced by the youth of a country as not solely their responsibility, but as a failure of the individual's social support network – his friends, teachers, parents, spouse, social role models, religious advisors, community organisations and governmental agencies.

It is therefore high time that we acknowledge our role and responsibility in shaping the youth of our country and take appropriate and meaningful steps in the form of social policy decisions and emotional support, to change the scenario. (More elaboration on this aspect will be done in Block four).

The transition of an individual from the protected environment of the school to a highly autonomy oriented atmosphere of the College opens up new vistas of experience for him/her. It is a time when he/she is seeking new answers, a time when he/she has to rediscover his/her relationships, and consolidate his/her experiences in a cogent and coherent way, so as to develop into a fully functioning individual, capable of harnessing and dealing with the challenges that come his/her way. Given the change in family dynamics and social trends, it is imperative to devise a program which addresses the needs and challenges faced by young adults and equips and enables them to evolve gracefully as fulfilled individuals and upright citizens. Life skills Education as documented by the WHO (1993), appears to be one such attempt. At the heart of Life Skills Education (LSE), is the “learning of life skills of abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life”. Life skills, from this perspective are essentially those activities which help to promote mental well being and competence among young people as they face the realities of life. It is based on the philosophy that young people should be qualitatively empowered to take responsibility for their actions. LSE uses the methodology of experiential learning, rather than didactic teaching through skills practice, role playing, case studies, games, debates, brains forming etc. LSE aims to enhance our skills in the areas of interpersonal relationships, critical thinking, sexual and reproductive health, problem solving and decision making, stress management and creativity, in order to promote mental health and help young people to be proactive and lead a qualitatively more enriched life.

Life Skills are particularly important for the Indian College Student as they would promote better sexual and reproductive health in a country with widespread onslaught of AIDS/HIV, teach decision making and critical thinking to individual's marred by poverty and unemployment and would address unfortunate issues like child abuse and suicide among the youth, as well. (More information about LSE will be elaborated upon in block IV).

### **Self-assessment**

5. *Devise a role play activity highlighting substance abuse prevention in the life of an Indian College Student.*

## *Summary*

The Indian College Student is at the crossroads in his life, trying to attempt a smooth transition from an adolescent into a mature adult. Societal demands make this transition for him/her far from easy. Apart from the demands that society imposes upon the young adults, the stage specific challenges which they face increase their difficulties manifold. Thus, introduction of a Life Skills Education (LSE) programme at this juncture, undertaken at the policy level could help the young adult to lead a satisfactory and qualitatively enriched life.

## *Unit-end exercises*

1. Why is vocational selection a major challenge for the Indian College Student?
2. Is LSE beneficial for a country like India suffering from abject poverty and illiteracy. Comment.
3. ‘Life’ as seen from the eyes of an Indian College Student is challenging or crippling? Reflect and write.

## *Suggested readings*

- Berk, Laura E. (1996) *Child Development*, New Delhi: Prentice Hall of India.
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- Hurlock, E.B. (1981) *Developmental Psychology : A Life Span Approach*, New Delhi: Tata McGraw Hill.
- Woolfolk, Anita (2001) *Educational Psychology*, Boston: Allyn & Bacon.
- World Health Organisation (1993) *Life Skills Education in Schools* (WHO/MNH/PSF/93. A Rev1) Geneva: WHO.

## *Understanding Personality and Facilitating Its Development*

Personality is not yet a science, at least not in the sense that Biology or Chemistry are sciences. In those fields, although there is disagreement about details and the latest findings, there is a common body of knowledge that few people in the field argue about. In personality there is agreement to disagree.

### *Introduction*

Issues of personality appeal to everyone. Understanding the personality of adolescents and youth is a particularly a fascinating area of study, since it is fraught with challenges and variations in patterns. Interestingly, while it is obvious that people differ from each other, how and why they differ is less clear. Personality psychology addresses the questions of shared human nature, dimensions of individual differences and the unique patterns of individuals. It encompasses the relatively enduring characteristics that differentiate people, especially those that make each of us unique. It includes all the patterns of thoughts and emotions that cause us to do and say things in particular ways. It leads us to act in a consistent and predictable manner, both in different situations and over extended periods of time. At a basic level, personality is expressed through our temperament or emotional tone. Personality also colours our values, beliefs, and expectations.

In short, 'Personality' signifies the uniqueness of a person, and the special characteristics that set apart that person from others. The characteristics include physique, temperament, adaptability traits, sense of self, identity, needs, desires, ambitions, aspirations, etc. The list of defining features is indeed long and varied, which is why 'personality' has no universal definition and is better understood as a psychological construct. This unit attempts to acquaint you with the basic knowledge and understanding in the domain of personality, so that you will be able to better understand and analyse the personality of your students and persons whom you deal with.



Based on what you have understood so far,  
List the personality characteristics of 5 students in your class.

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## *Learning outcomes*

After working with this unit, you will be able to:

- define personality;
- know the different approaches to personality;
- identify the constituents of personality;
- understand the process of personality development;
- identify the factors affecting personality development;
- understand the Indian concept of personality; and
- apply the knowledge acquired to the real world situation.

### **Personality and Ability**

Although to some the term personality refers to all aspects of a person's individuality, typical usage divides the field into studies of ability and personality. Ability is the best one can do on a particular situation in a limited time or with unlimited time. Personality includes preferences and estimates of what one normally does and how one perceives oneself and is perceived by others. Some of the most interesting results of the past decade have been the demonstrations of the moderate to strong heritability of personality and ability. Using techniques of quantitative behavior genetics, it has become commonplace to show that roughly 40-60% of the variation in most personality traits have a genetic base. The most exciting and counter-intuitive findings have been that the shared environment is much less important than was previously thought, but that the unique environment is very important.

Some of the earliest work on personality were descriptions of different "characters" that may be found in the work of Plato, Theophrastus, and Galen. Plato's descriptions of the personality characteristics needed for leadership: "... quick intelligence, memory, sagacity, cleverness, and similar qualities, do not often grow together, and ... persons who possess them and are at the same time high-spirited and magnanimous are not so constituted by nature as to live in an orderly, peaceful and settled manner; they are driven any way by their impulses, and all solid principles go out of them. ... On the other hand, those stable and steadfast and, it seems, of more trustworthy natures, which in a battle are impregnable to fear and immovable, are equally immovable when there is anything to be learned; they are always in a torpid state, and are apt to yawn and go to sleep over any intellectual toil." (Plato, The Republic, 650BC).

## *Approaches to personality*

The study of personality includes multiple approaches to the questions of who we are and how and why we are similar and different to other individuals. The field stretches from a fairly simple empirical search for differences between people to a rather philosophical search for the meaning of life. Typically, there are five significant approaches to personality which derive their importance from the schools of psychology which they represent. They include:

- The psychoanalytic approach
- The behavioristic approach
- The traits approaches

- The social cognitive approach
- The humanistic approach

Let us try to understand the emphasis underlying each one of them.

### *The psychoanalytic approach*

The psychoanalysts tend to believe that the answers to the important questions about human behaviour lie somewhere behind the surface, hidden, in the unconscious. According to them, behaviour is determined largely by powerful forces within our personality of which we are not aware. These hidden forces are shaped by our childhood experiences, and play an important role in energizing and directing our everyday behaviour. The approach is mainly, although not exclusively concerned with our emotional responses and our emotional conflicts aroused by the changing events of our everyday life, especially those that cause over reactions to unpleasant events. In this approach, the genesis of adult patterns of behaviour, especially anxiety, depression, tension, etc., are traced back to what transpired during childhood.

### *The behavioristic approach*

In this perspective, the answers are felt to lie in careful observation of an individual's behavior and his/her environment and their relationship. The focus is on the outer person. To the strict learning theorist, personality is simply the sum of learned responses to the external environment. It is a collection of learned behaviour patterns which have been reinforced in the past. For example, if Rupa is sociable both at parties and at meetings, it is because she has been reinforced previously for displaying social behaviour. These theorists do not dwell on 'personality' as an independent construct and give it meaning only through their work on learning theories. The 'Behaviorists', as well as their more contemporary descendants the 'Cognitivists', prefer quantitative and experimental methods to measure and study personality.

### *The traits approach*

Theorists subscribing to this approach tend to focus on the more enduring dimensions of personality characteristics, along which people differ. They use the concept of trait or a relatively permanent characteristic of behaviour which typifies a pattern to explain personality. For example, serious, adventurous, emotionally stable, friendly, resourceful, determined etc. are all illustrations of traits which manifest in our overt behaviour. The list is large and extensive. Persons can best be understood with reference to the dominant traits which they possess. These theorists do not assume that some people have a trait and others don't. Rather, they propose that all people possess certain traits, but that the degree to which a given trait applies to a specific person varies and can be quantified. The major challenge is to identify the primary traits necessary to describe personality. In this there is some variation across theorists.

### *The social cognitive approach*

This approach to personality stresses on the importance of cognition -thoughts, feelings, expectations and values, as central to our personality. According to theorists of this tradition, personality develops by repeated observation of the behaviour of others. Typically, human beings try to incorporate into their being what they have seen, liked or wanted to possess with reference to others. Thus social cognitive theorists vest the individual with the capacity to be proactive and responsive in his/ her environment and not just someone who is conditioned or imitative. The individual-society relationship is much more dynamic and interactive in this perspective.

### *The humanistic approach*

Often based on a reaction to psychoanalytic and behavioristic theories, the humanists tend to focus on understanding people's basic goodness and their tendency to grow to higher levels of functioning. For them, a person's needs, interests, feelings and self concept are by far the most significant constituents of personality. They see personality development as an ongoing continuous process of self enrichment. It is this self-motivated ability to change and improve, along with the person's unique creative energies, which make up the core of personality. This approach emphasizes upon the significance of personal meaning in one's life. Ideas such as self-actualization search for meaning, personal beliefs and personal feelings play a central role in understanding personality.

#### **Self-assessment**

1. Read the statements given below and state which approach is being followed, in your understanding:

- (i) A teacher characterizes her student as friendly, even-tempered, smart, energetic, self centered and arrogant.
- (ii) A counselor comments that Shyam who is sloppy, dishevelled, and unkempt, and Umesh who is neat, precise, controlled, are quite similar, at least in terms of the underlying part of their personality that motivates their behaviour.
- (iii) Samarpan is a bright girl. She is very aggressive in class and loves to watch action movies and TV serials. She shows traces of her favourite characters in her own personality.
- (iv) Shivam, a student in your class is disinterested in your subject. On probing 'why' you find that he has been getting poor marks in all his papers and his parents don't give importance to education.
- (v) Ruby, a student of your class is inspired by Mother Teresa and wants to be like her. She reads her life history, in her quest to find the path to her saintliness.

#### *Answers*

- i) Trait Approaches, ii) Psychoanalytic Approach, iii) Social Cognitive Approach, iv) Behavioristic Approach, v) Humanistic Approach

### *Constituents of personality*

In the preceding section, you read about the different approaches to studying personality. You must have noticed that each approach places emphasis on some specific constituents of personality. For instance, the psychoanalysts emphasise the unconscious, the behaviourists focus on overt behaviour, social cognitivists stress on thoughts, ideas and expectations and the humanists on needs, interests and self. These key structures which serve to provide the basis of personality are actually the constituents of personality. You already know that personality has been an area of extensive evolution and movement. The constituents of personality are also thus very many. An attempt is being made to acquaint you with some of the important constituents of personality in general without taking recourse to specific theories where they are located or emphasized. This will enable you to appreciate the vastness of the area of personality. You will also be able to appreciate, the various ways in which you can understand your own personality and your students' personality and particularly the way you and they behave.

### *The unconscious and the conscious*

**The Unconscious**, is a place where our worst fears bubble and boil. It is a centre which accounts for the many things that influence us without our full awareness.

There are three aspects to our unconscious.

The first is **biological**. We come into this life with something instinctual called the **id** or with a collective **unconscious** in place. It is likely to be composed of whatever **instincts** remain a part of our human nature, plus our **temperament** or inborn personality and certain **pre-dispositions** to behave and react in ways similar to our ancestors.

The second is the **social unconscious** or **superego**. It might include our language, social taboos, cultural habits, all the dos and don'ts which we are expected to follow and so on. It includes all the things we learned so well and so long ago that they have become a "second nature" to us. The third is the **personal unconscious**, or the unconscious aspect of the ego. It is composed of our idiosyncratic **habits** and all those things we have learned so adeptly, that we no longer need to be conscious of them in order to enact them. For example, knowing how to drive so well that we can comb our hair, talk on a cell phone, and notice the attractive person in the rear view mirror, all at the same time. Also included among those well-learned things might be the **defense mechanisms**, which we use to help us with habitual efficiency to ignore uncomfortable realities in order to save our sense of self-worth.

**The conscious** refers to our ability to experience reality. It is that part of us which we are aware of with regard to meaning and relevance to ourselves as biological, social and unique individual organisms. It provides us with the freedom to choose among the choices available to us, i.e., **free will** or **self-determination**. It is **personal** in that it includes everything we feel, perceive, think, and do in our own subjective interpretation or world view. The nature of one's unconscious and conscious are significant indicators of our personality.

### *Temperament*

Temperament refers to three aspects of behavior that appear relatively early in life: our activity level, our mood and our emotional responsiveness to other people. It is built into us genetically. Although there is a degree of flexibility allowed, to a large extent we "are" our temperaments for our entire lives. So, if our temperament is characterized by being anxious or cool-headed or relaxed or highly strung, we will be like that in most situations. Temperament is thus used as an indicator of personality.

### *Learning*

Learning is taken for granted by most personality theorists. There are at least three kinds of learning: **basic**, **social**, and **verbal**. **Basic learning** includes **conditioning**, getting feedback from our environment and is determined by the pattern of rewards and punishment or reinforcement which we have received. It also includes **latent learning** which is learning to **differentiate** one thing from another on the basis of the consequences, without actually being aware of it. It usually involves other people and for example when Chinki does something that his mother or father do not approve of — he may be **punished** in some way. Likewise, he may be **rewarded** when he does something right for a change. This is also usually called conditioning, but the fact that it involves others, means it is also social learning.

**Social learning** includes **vicarious learning** (noticing and recalling the kinds of environmental feedback and social conditioning other people get) and **imitation**. This kind of learning is most significant for the development of personality. It can be

either conscious, as when we are watching an artist to learn his/her technique, or unconscious, as when we grow up to be disconcertingly like our parents or elder brothers and sisters.

**Verbal learning** refers to learning from words. Culturally, it's a highly significant form of learning. Most of the learning we do in our many years of schooling is verbal. We are taught appropriate ways in which we can express ourselves.

### *Emotions*

Emotions are typically our feelings towards certain objects, persons or events in our environment. We are often described by the emotions which we embody. At the lowest level, we have **pain** and **pleasure feelings**, which are like sensations. Psychological pain and pleasure — **distress** and **delight** are usually the root of all other emotions. Distress is what we feel when the events of the world are more than we can handle. Delight is what we feel when we discover that we can handle them after all and experience a sense of pleasure.

Other significant emotions include:

- **Anxiety** which revolves around unnecessary or inappropriate fear.
- **Fear** which involves the perception of imminent harm, physical or psychological.
- **Guilt** which is the feeling aroused when one contravenes internalized social rules, closely related to the sense of **regret**, of opportunities not taken up.
- **Sadness** which is the experience that things are not as they should be, with the added notion that we have no power to alter the situation.
- **Anger** which is a result of the experience that the world is not as it should be.

### *Motivation*

Motivation refers to the force or drive which gives strength and direction to our behaviour. Our personality can often be understood in terms of our motivational structures reflected by our needs, drive, goals and presses. Motives tend to vary in terms of how they mediate behaviour and in their level of importance for specific human beings. First, there are the **biological motives** which are, mostly instinctual. These are our need for air, water, and food. Then, there is the need for pain-avoidance and the need for pleasure: pleasant touch, and sex. Then, there are the **social motives** which vary as a function of our culture, individual social contexts and learning. Social motives include the need for acceptance, attention, and approval, as well as forms of self-esteem that are based on such approval. Following this, there are the more **personal motives**, which are based on the experiences of the individual, especially our habits (good and bad), defense mechanisms and our personality "styles."

Finally, there are the **higher motives** which are conscious and provide meaning to our lives. They appear to be of two kinds:

- **Competence motive** or **striving for perfection** which includes such motives as the desire to learn, attain competence and mastery, and even the desire to be creative.
- **Altruistic motives**, which include social **concern**, compassion and love. Our motives have a great bearing on our personality.

### *Self concept*

Self-concept may be defined as a conscious, cognitive and experiential perception and evaluation by individuals of themselves. It consists of their thoughts and opinions about themselves. It has been referred to as the individual's self perceived consistent

individuality. It also implies a developing awareness of who and what one is. Self concept refers to what individuals see when they look at themselves in terms of their self-perceived physical characteristics, personality skills, traits, roles, cognitive abilities and social status. It is the sum total of their self-definition or self-image. Self-concept develops when the adolescents think about themselves and gather evidence that enables them to evaluate themselves. From the evidence which they obtain, they form postulates about themselves and check their experiences and relationships against these. They compare themselves with their own ideals and those of others. Self concept can thus be understood as encompassing a person's self image and self esteem, or the evaluated self.

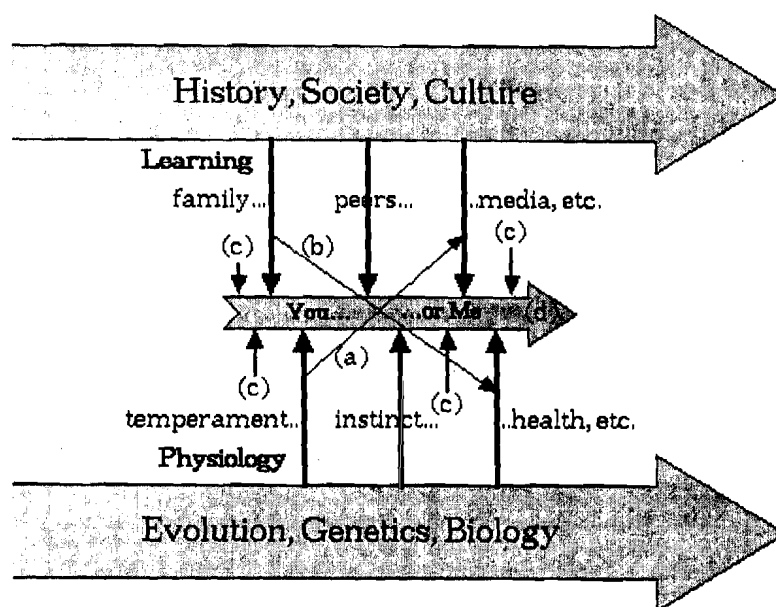
Some recent studies have highlighted the importance of what significant others say to children as a shaping factor in self concept. Significant others include a child's parents, teachers, siblings and peers. Their positive and negative statements have a high predictive effect on whether the child's self concept will be positive or negative.

Research in personality ranges from analyses of genetic codes and studies of biological systems to the study of sexual, social, ethnic, and cultural bases of thought, feelings, and behavior. Personality research includes studies of cognitive abilities, interpersonal styles, and emotional reactivity. Methods range from laboratory experiments to longitudinal field studies and include data reduction techniques such as factor analysis and principal components analysis, as well as structural modeling and multi-level modeling procedures. Measurement issues of most importance are those of reliability and stability of individual differences.

### *Factors affecting personality development*

Having understood the constituents of personality development in the earlier section, let us now try to describe and explain the different factors affecting the development of personality.

Examine the figure given below and try to draw some inferences from it.



**Figure 1** Factors affecting personality development

You may have concluded that the "me or you", is at the centre. This "me or you" is influenced by history, society, and culture, primarily through learning as mediated by

our families, peers, the media, and so on at the upper end. At the bottom, we have evolution, genetics, and biology, which influence us by means of our physiology (including neurotransmitters, hormones, etc), continuously from conception to death. The scenario is complicated by "accidental influences" and free will or self determination. The factors affecting personality development can thus be classified on the basis of their origin and realm of operation as the biological factors or environmental factors.

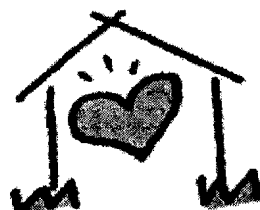
### *Biological factors*

Biological factors such as our hormones and brain structure influence our behaviour, but our genes do not have programmes for specifying our personality traits. Their actual job is to control the development of our nervous and endocrine systems, which in turn control our behaviour. Therefore, our genes do not have direct control over our personality traits, but they do have a role in influencing our behaviour. Complex human behaviours are not determined by single genes.

Reports emphasize that the broad personality traits are most likely to stem from polygenic influence and are moderated by environmental experience. Subtle differences in neurotransmitter availability and re-uptake, vary the sensitivity of individuals to cues about their environment that predict future resource availability and external rewards and punishments. It is the way these cues are detected, attended to, stored, and integrated with previous experiences that make each individual unique.

### *Environmental factors*

There are many potential environmental influences that help to shape personality. Let us try to examine them.



the environment where a  
person grows up in can  
form one's personality

### *Family*

The child's experiences in the family are important for his/her personality development. These include whether a child's basic needs are well met and how a child is brought up. Everything that a child experiences in his/her home leaves an enduring mark on his/her personality. For example, children who are toilet trained too early or have their toilet training carried out too strictly may become rebellious. Likewise, by identifying with their same-sex parent, children can learn appropriate behaviour to their sex especially when there is a good relationship with that parent. Children are also affected by siblings. Within the home and family, the most significant factor which affects a child's personality development is the parenting style which he/she has been exposed to.

### *Parenting style*

There is no doubt that parents have a pivotal influence on the child. Before we proceed please reflect on your own experience and answer the following questions.

1. How would you describe your parents' typical behaviour and attitudes in raising you?
  - a) Were they warm and accepting?
  - b) Were they cold and rejecting?
2. Did they insist you meet their standards or did they let you do whatever you pleased?

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Your answers will enable you to understand that personality development is influenced by the parenting dimensions of **nurturance** (warm v/s cold) and **control** (setting limits v/s not setting limits). Keeping these two dimensions in mind there are four popular parenting styles which emerge. These include:

- Authoritarian Parenting
- Permissive Parenting
- Authoritative Parenting
- Uninvolved Parenting

#### Self-assessment

2. Read the statements given below and tick whichever statement is applicable to you
  1. Parents want their child to obey their demands.
  2. They do not make many demands on the child.
  3. They are uninterested in what the child does.
  4. They guide what the child does keeping in mind the child's needs, interest and ability.
  5. Keep ordering their child to act his/her age.
  6. Keep telling their child to act any age they want.
  7. Keep asking their child "what is your age."
  8. Keep telling the child what to do.
  9. Rarely explain the reasons for their decision.
  10. They are passive in setting standards for the child to achieve.
  11. Set few standards.
  12. They frequently provide explanations for their decisions.
  13. They are cold and rejecting.
  14. They are warm and accepting.
  15. Provide minimal warmth and support.
  16. They are nurturant and have realistic maturity demands.
  17. They don't communicate with the child.
  18. Rarely communicate the standard expected from the child.
  19. Low on control and warmth.
  20. They communicate their expectations clearly to the child.

You can score your results in terms of the key given below and locate the style of parenting which you have experienced.

Authoritarian: 1,5,9,13,17 Permissive: 2,6,10,14,18 Uninvolved: 3,7,11,15,19  
Authoritative: 4,8,12,16,20

Let us now try to understand the impact of the parenting style on the child's personality development.

### *Impact of parenting style on the child*

Children of parents, who have the **authoritarian parenting** style, tend to be withdrawn, unhappy, anxious and insecure when interacting with peers. They act aggressively when frustrated and obtain poor grades.

Children from **permissive families** are dependent on and demanding of adults, are more immature than others and have difficulty controlling their impulses.

**Uninvolved parenting** is associated with child personality characteristics such as low self esteem, increased aggression, reduced control over impulses, and insecure attachments.

**Authoritative parenting** style is associated with children who demonstrate autonomy, high self esteem, superior academic performance and high degree of self control. These children are friendly, popular with peers, co-operative with adults, independent and achievement-oriented.

Besides the parenting style, personality development is also influenced by the emotional tie or attachment between the parent and the child and the child's identification with his or her parents.

### *Birth order and sibling relationships*

The child's position and relationships with siblings in the family also influence personality. Research has indicated that first-born children in most families are more willing than later-borns to conform to the requests of authority. They are more strongly motivated to achieve in school, are more conscientious, and less aggressive, more helpful and self controlled.

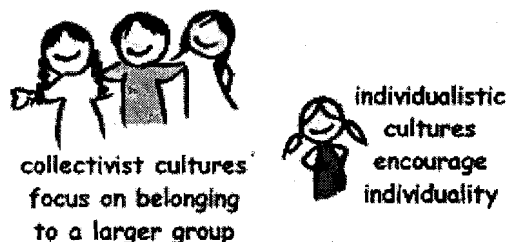
### *Culture and society*

An American anthropologist Margaret Mead has shown how social and cultural factors have an important influence in personality development. Members of two New Guinea tribes are of the same racial store and live in the same area. However, one group is peaceful, friendly and cooperative and the other group is, on the contrary, assertive, hostile and competitive.

Researchers, when comparing cultural groups in specific aspects of personality, have found some interesting differences. Asian, African, Central American, and South American countries have collectivist cultures that focus on belonging to a larger group, such as a family, tribe, or nation. Northern European countries and the USA have individualistic cultures that put more emphasis on individual needs and accomplishments. In these cultures, people believe competition is more important than co-operation.

Professionals have also done some comparison on the Asian and American **ideas of self**. Their studies indicate that Asian children are taught to be modest about personal achievements, and to see themselves as a fraction of a larger whole. Children are taught to try to fit in with others and not to stand out from the group. Typical Asian children learn to place value on themselves in terms of the group they belong to - their relations with others and group achievements. And because of this, they do not need to exaggerate how unique or capable they are. Asians tend to see themselves as similar to their friends.

American parents teach their children to be independent, to feel good about themselves and to see themselves as special individuals. Children are encouraged to do well in competitive activities and to become outstanding. Therefore, American children learn to value themselves by their credits, abilities, accomplishments and by what they own. The American culture encourages an “independent view of the self”. American youngsters tend to exaggerate how unique they are and overestimate their skills and capabilities. This is not the pattern in Indian society where a ‘collective identity’ and being one with the group one belongs to, is encouraged.



Thus the culture one is born into has a great bearing on one's personality orientation.

### *Media*

Mass media can have both a positive as well as a negative impact on the personality of the adolescent. Motivating educational programmes provide information and models for pro-social behaviour. However, mass media can also make the adolescents passive learners, teach them stereotypes and prejudices and provide an unrealistic view of the world and violent models of aggression.

### *Peers*

The peer group has a significant influence on the personality of the individual. Peers are the persons with whom an individual identifies. They are usually, but not always of the same age group. The peer group is a source of affection, sympathy and understanding and a supportive setting in general. A healthy part of every child's development is involvement with their peers. In fact during adolescence, the peer group facilitates in the development of **identity** - finding the answer to the question “**Who Am I?**” and **autonomy** - discovering the self as separate and independent from parents. Friends provide the young adult with a sounding board to test their ideas and a standard by which to judge their own physical and psychological growth. Peers provide an opportunity for individuals to meet their needs, to feel capable, to belong, to be respected, and to have fun. The ability to make and keep friends is one of the most powerful indications of successful and positive peer group interactions

### *Self*

There are a variety of ways to think about the self. Two of the most widely used terms are self-concept and self-esteem. You have already been acquainted with these terms in the section on ‘constituents of personality.’ Let us here however try to understand ‘self’ in relation to personality development.

#### **Self-assessment**

3. Complete the sentences given below, reflecting on your own life experiences.

- a) People who know me would describe me as \_\_\_\_\_
- b) In times of need I get support from \_\_\_\_\_

- c) My body is \_\_\_\_\_
- d) Changes have taken place in my body \_\_\_\_\_
- e) I feel everything I do \_\_\_\_\_
- f) I feel my role is \_\_\_\_\_
- g) Asking others for help is \_\_\_\_\_

*What you fill in against the blank in each statement is actually an indication of your sense of 'self.'*

Self concept generally refers to the totality of the person's thoughts and feelings with reference to himself or herself.

It develops when we reflect on what we have done and can do in comparison to our expectations and the expectations of others, and the characteristics and accomplishments of others. It is not innate, but is developed by the individual through interaction with the environment and reflecting on the experience of that interaction. It includes the following: **physical aspects** routed through the body image, **the social identity** or the different roles which an individual plays such as daughter, colleague, friend, mother, neighbour etc., **personal identity** consisting of the moral/ethical self, intellectual self, and the emotional self, i.e. one's values, beliefs, views, perspectives, goals, relationships etc. The 'self'-**esteem** which is a personal judgment of self-worth, value, competence (how positive we feel about ourselves). Our sense of self is influenced by our early bonding experiences, physical, cognitive, interpersonal development and maturation, personality characteristics, physical attributes, our culture, our environment, our socio-economic status, interpersonal relationships, and envisioning of our professional and our personal roles.

There are several different components of self-concept: physical, academic, social, and transpersonal. The physical aspect of self-concept relates to that which is concrete, what we look like, our sex, height, weight, etc.; what kind of clothes we wear; what kind of car we drive; what kind of home we live in; and so forth. Our academic self-concept relates to how well we do in our studies or how well we learn. There are two levels: a general academic self-concept of how good we are overall and a set of specific content-related self-concepts that describe how good we are in Math, Science, Languages, Social Science, etc. The social self-concept describes how we relate to other people and the transpersonal self-concept describes how we relate to the supernatural or the unknown.

**Self esteem** though an integral component of self concept is important in its own stead. No discussion on the self can thus occur without mentioning the self esteem. It is an intrinsic happiness and sense of well being that stems primarily from non-material sources. It is a personal judgment of self-worth, value, and competence (how positive we feel about ourselves)

William James' (1890) formula is:

$$\text{Self-esteem} = \text{Success} / \text{Pretensions.}$$

That is, increasing self-esteem results when success is improved relative to expectations. An interesting corollary to this equation is that success is limited by expectations and self-esteem:

$$\text{Success} = \text{Pretensions} / \text{Self-esteem.}$$

The personality characteristics that people with high self esteem seem to share are that they tend to be confident and well equipped to cope with the challenges that life presents. It also means believing that they deserve success and happiness. People with

higher self esteem tend to make decisions that are more in line with their best interests. These people are also more likely to recognize the long-term consequences of their actions. Low self-esteem can be the underlying factor in personality characteristics involving fear, anxiety, anger, panic attacks (self-esteem attacks), dependence, lack of assertiveness, depression, eating disorders, teen and gang violence, addictive behaviors, relationship problems, and others.

### **Self-assessment**

4. *Read each item below and then indicate how well each statement describes you using the response scale.*

0 = *extremely uncharacteristic (not at all like me)*

1 = *uncharacteristic (somewhat unlike me)*

2 = *neither characteristic nor uncharacteristic of me*

3 = *characteristic (somewhat like me)*

4 = *extremely characteristic (very much like me)*

1. \_\_\_\_\_ *On the whole I am satisfied with myself*

2. \_\_\_\_\_ *At times I think I am no good at all*

3. \_\_\_\_\_ *I feel that I have a number of good qualities.*

4. \_\_\_\_\_ *I am able to do things as well as most other people*

5. \_\_\_\_\_ *I feel I do not have much to be proud of.*

6. \_\_\_\_\_ *I certainly feel useless at times.*

7. \_\_\_\_\_ *I feel I am a person of worth, at least on an equal plane with others.*

8. \_\_\_\_\_ *I wish I could have more respect for myself.*

9. \_\_\_\_\_ *all in all I am inclined to feel that I am a failure.*

10. \_\_\_\_\_ *I take a positive attitude towards myself*

### **Scoring**

*Total self-esteem score can range from 0-40*

*Above 20: high self-esteem*

*Below 20: low self-esteem*

### **Before calculating:**

1. *Reverse the rating given to statement number 2, 5,6,8,9 and total it*

2. *Add the total obtained in step 1 to the total obtained from statements 1, 3, 4,7,10*

**Source:** Adapted from Rosenberg's Self Esteem Scale (1979).

## ***Interaction of nature and nurture***

A person's temperament is formed both by his/her genes and the environment in which he/she grows and lives. Researchers state that the continuity and discontinuity of temperament is a result of the interaction between the inherited characteristics of the individual and the environment. They especially believe that in order to have a healthy development, there must be a goodness of fit between the individual's temperament and

the home environment. When parents of a difficult child give him/her a happy, comfortable and stable home life, the child's negative behaviors will improve as he/she grows older.

From the moment of birth, biological factors and environmental factors are interacting to form a person's personality. Parents not only pass on their genes to their offspring, but also provide them with a home environment to live in, both of which are results of the parents' genes. There is a correlation between the child's inherited characteristics, which is called genotype and the environment. For example, intelligent parents will have a higher chance of giving birth to intelligent children. At the same time, intelligent parents will be more likely to provide their children with a good learning environment, one which is intellectually stimulating, by teaching their children themselves and giving them books, lessons, activities and so on.



Interaction and influence  
of genetics and environment  
with each other form a  
person's personality.

Environmental influences outside the family environment, such as school, college and friends, are often more important to the development of personality. However, these apparent "outside influences" may have more to do with genes than it would seem at first. People seek out or even create environments to which they are genetically predisposed. For example, a combative person is more likely than a peace-loving person to find an environment in which arguments are likely to take place, or to create such an environment by starting fights.

## *Process of personality development*

We often share personality traits with others, especially members of our own family and community. This is largely due to being socialized in much the same way. It is normal for us to acquire personality traits as a result of enculturation. Most people adopt the traditions, rules, manners, and features of their culture.

### *Socialization*

Socialization is the process by which an individual learns the rules and norms of appropriate behaviour. Boys and girls are socialized differently. They receive different messages from their parents and other adults as to what is appropriate for them to do in life. They are encouraged to prepare for their future in jobs, fitting their gender. Boys are more often allowed freedom to experiment and to participate in physically risky activities. Girls are encouraged to learn how to do domestic chores and to participate in child rearing by baby-sitting. If children do not follow these traditional paths, they are often labeled as marginal or even deviant. Girls may be called "tomboys" and boys may be ridiculed for being "effeminate." Socialization thus serves to develop traits and characteristics which typify a person's personality.

### *Education*

"Education is drawing out of the best in child and man-with reference body, mind and spirit." – Mahatma Gandhi

"Education is the manifestation of the perfection that is already in man" – Swami Vivekananda

Education brings out the hidden potential in the student and his/her understanding of the universe around. It enables the individual to acquire knowledge useful for life and marks the progress of a society. For education to be a process of growth and development, the child and its personality should be at the centre of the entire edifice of education. The educationist has to realize that the student is not plastic material to be moulded and pressed into a shape as desired and decided upon by the parents and educators. There should be space and free choice for the student to choose her/his own subjects of study, her/his pace of progress, and even (within limits) the teachers. Individual differences should be recognized. Necessary variation in psychological treatment, presentation of material for of study, and criteria for judgment of performance should be made. The syllabi should be flexible and should correspond to the psychological needs for the growth of personality. Education thus serves as a means to nurture the process of personality development.

### *Indian concept of personality*

The Indian concept of personality consists of several systems and traditions. In this section, you will be acquainted with the more popular or well known systems, since the attempt is to show you how personality is defined and interpreted. Let us begin by studying the system of yoga. According to the system of Yoga, personality may be regarded as a plastic expression of certain forces and ends of nature, combined for the time being. This combination of forces can be disturbed, modified, and totally changed. There is a distinction between the real person and the instruments of the person, viz. the body, life and mind. Between the two there is the "force" of the person that expresses itself and gives a special turn, a special power of configuration, and a certain stamp to the instruments. It is this special stamp or power of configuration that gives rise to the specific formation of a pattern of qualities and drives to our body, life and mind and is called 'personality'

According to Samkhya psychology, body, life and mind are the expressions of Prakriti marked by the three gunas: sattva, rajas and tamas. The normal human being is simply an instrument of Prakriti, dominated largely by tamas or rajas, expressing some pattern of these qualities. However he/she is unable to become aware of the inner person, Purusha. In the Samkhya tradition, the Purusha is a mere witness which is inactive, and it is not proper to speak of the force of the Purusha. But in another school of thought the Vedanta, the inner person has its own force, often called the soul-force, which when awakened, pours itself into the instruments of Prakriti, and it is this meeting of the soul-force and Prakriti of nature that causes the real formation of personality. The greater the opening of nature to receive the flow of the soul-force, greater is the resultant personality. The fullness of personality is achieved initially by full development of mind, life and body under the sovereign guidance, rule and will of the Soul-Force. The Soul-Force vibrates with the power and presence of the inner person, the Chaitya Purusha. The secret of all development of personality lies in the presence of Chaitya Purusha and in its force.

The fullness of personality can come about only by complete emergence of the inner person and the full expression of its force. This force expresses itself through four powers: a power for knowledge, a power for strength, a power for mutuality and active and productive relations and interchange and a power for works, labour and service. Accordingly, we have four basic personalities: the personality of knowledge, the personality of strength, the personality of harmony and the personality of skill. Individuals can be understood in terms of how these processes manifest in them.

### Self-assessment

5. Read the following statements and tick the one/ones which are most appropriate with the Indian view

1. Personalities can be multiplied within the same individual.
2. The conflicting personalities in the individual can be harmonized
3. One can become capable of putting forth the needed personality, according to the circumstances or the demands of the work or situation,
4. Some personalities remain behind, contributing to the efficacy of the personality put in front.
5. One can even go beyond all personality and know the real person that assumes so many personalities.

*Answer: All are true.*

## Personality disorders

Many people's difficulties begin with childhood experiences of abuse, neglect, poverty, sickness, parent's sicknesses or death, parental psychological problems, divorce, immigration, accidents, deformities, etc. Sometimes, we are strong enough, or have enough support, to weather these storms. More often, we find that these experiences leave us with an on-going apprehension about life. We end up suffering from anxiety, guilt, sadness, and anger, not just as a direct result of the specific experience, but because we no longer trust life.

A child with loving parents and compassionate relations, peers, and teachers may well be able to cope with these problems. On the other hand, a lack of support, or **positive regard**, can leave even a child blessed with a comfortable environment troubled with self-doubt and insecurity. **Incongruence** between what we need and what we allow ourselves, leaves us with **low self-esteem**, or what others call a **poor self-concept** or an **inferiority complex**.

Confronted with the difficulties of life, lacking in the support of others, and not even enjoying confidence in ourselves, we find we must defend ourselves however we can. We defend our sensitive egos by **denial** and **repression**, which attempt to block the offending experiences directly, from the environment and our memory, respectively, at the cost of emotional exhaustion. Denial applies to information from outside ourselves, repression to the things we already know (way down inside). Sometimes we resort to **distortion** and **rationalization** which are more sophisticated and less exhausting and deal with the offending information by working around it. Distortion is the manipulation of information from the outside; rationalization is the manipulation of information we already own.

These are lies we tell ourselves and others in order to minimize the impact of that incongruence between our need for love and security and what is afforded to us. They only help in the short run. In the long run, they lead us into a serious misrepresentation of how other people work, and of who, we are.

## Summary

Personality signifies the uniqueness of a person, and the special characteristics that set apart that person from others. The study of personality includes multiple approaches. Some significant approaches are: trait approaches, psychoanalytic approach, social cognitive approach, behavioristic approach, and the humanistic approach.

The constituents of personality include the unconscious and the conscious, temperament, learning, emotions, motivation, and the self concept.

There are many potential factors that are involved in shaping a personality. These factors are usually seen as emanating from heredity and the environment. It is not clear which of these two influences is more significant in shaping personality. However, research by psychologists over the last several decades has increasingly pointed to hereditary factors being more important, especially for basic personality traits such as emotional tone. On the other hand, the acquisition of values, beliefs, and expectations seem to be due more to socialization and the unique experiences that an individual has, especially during childhood.

### *Unit-end exercises*

1. Identify three students in your class and analyze their personality in terms of the following:
  - Highlight the constituents of their personality
  - Identify and describe the factors affecting their personality development
2. Read the following case vignette and answer the questions which follow it.

Shalini is 17 years old. She is from an elite family. Her mother runs a boutique and father is an industrialist. She loves to see movies, listen to pop songs, watch soap operas and the latest music videos. Her sister who is 6 years older got married a year ago. She misses her sister and feels lonely as she doesn't have anyone to talk to, and discuss her feelings with. Once a proactive, cheerful, popular girl, now she doesn't like to talk to her friends, participate in school activities, forgets to do whatever she is assigned to do. She spends most of her time reading romantic novels and fantasizing how someday someone will woo her and whisk her away to a world of love and romance. The other day she was caught staring vacantly in space. Seeing that she was inattentive in class, the teacher asked a question and she had no idea what was going on in class. Her friends are complaining that she has become irritable and starts screaming for no rhyme or reason. In fact the other day, she slapped a fellow student.

- Discuss Shalini's personality development process.
  - What are the significant factors which have influenced this process?
  - How will you use environmental management to help her?
3. **Rate** each of the adjectives given below as they apply to you: Use the nine-point rating scale.

Scores should range between 8 and 72. Scores from 8 to 29 could be considered **low**, from 30 to 50 **average**, and from 51 to 72 **high**.

Scores are tabulated as follows: First, "reverse" all scores in GREY fields by subtracting from 10. Then sum the columns. Column 1 = Extraversion, Column 2 = Agreeableness, Column 3 = Conscientiousness, Column 4 = Stability, Column 5 = Openness.

It has developed from the Five-Factor Model of personality. It is based in a belief that people are rational beings and can account for their own personality and behaving. According to this theory, people generally understand their own way of being and can analyze their own actions and reactions.

NOT ACCURATE  
ACCURATE

Extremely    Very    Moderately    Slightly    Average    Slightly    Moderately    Very    Extremely  
1            2            3            4            5            6            7            8            9

talkative: <input type="checkbox"/>	sympathetic: <input type="checkbox"/>	orderly: <input type="checkbox"/>	envious: <input type="checkbox"/>	deep: <input type="checkbox"/>
withdrawn: <input type="checkbox"/>	harsh: <input type="checkbox"/>	careless: <input type="checkbox"/>	relaxed: <input type="checkbox"/>	average: <input type="checkbox"/>
bold: <input type="checkbox"/>	kind: <input type="checkbox"/>	systematic: <input type="checkbox"/>	moody: <input type="checkbox"/>	philosophical: <input type="checkbox"/>
bashful: <input type="checkbox"/>	warm: <input type="checkbox"/>	inefficient: <input type="checkbox"/>	touchy: <input type="checkbox"/>	creative: <input type="checkbox"/>
energetic: <input type="checkbox"/>	cooperative: <input type="checkbox"/>	practical: <input type="checkbox"/>	jealous: <input type="checkbox"/>	intellectual: <input type="checkbox"/>
quiet: <input type="checkbox"/>	distant: <input type="checkbox"/>	sloppy: <input type="checkbox"/>	mellow: <input type="checkbox"/>	ordinary: <input type="checkbox"/>
shy: <input type="checkbox"/>	cold: <input type="checkbox"/>	disorganized: <input type="checkbox"/>	temperamental: <input type="checkbox"/>	complex: <input type="checkbox"/>
extraverted: <input type="checkbox"/>	rude: <input type="checkbox"/>	efficient: <input type="checkbox"/>	fretful: <input type="checkbox"/>	imaginative: <input type="checkbox"/>

The five factors include:

### 1. Extraversion

The extraverts tend to be more physically and verbally active whereas the introverts are independent, reserved, steady and like being alone. The person in the middle of the dimension likes a mix between social situations and solitude. Extraverts are adventurous, assertive, frank, sociable and talkative. Introverts are quiet, reserved, shy and unsociable.

### 2. Agreeableness

The agreeableness scale is linked to altruism, nurturance, caring and emotional support versus hostility, indifference, self-centeredness and jealousy. Agreeable people are altruistic, gentle, kind, sympathetic and warm.

### 3. Conscientiousness

The conscientious, focused person is concentrating on only a couple of goals and strives hard to perceive them. He is career oriented, while the flexible person is more impulsive and easier to persuade from one task to another. Conscientiousness has been linked to educational achievement and particularly to the will to achieve. The more conscientious a person is, the more competent, dutiful, orderly, responsible and thorough he is.

### 4. Stability

Emotional stability is related to calm, stable and relaxed persons, whereas neuroticism is linked to anger, anxiousness and depression. The persons with a tendency towards neuroticism are more worried, temperamental and prone to sadness. The name neuroticism doesn't refer to any psychiatric defect, it just means negative affectivity or nervousness.

## 5. Openness

People with a high openness have broader interests, are liberal and like novelty. This factor relates to intellect, openness to new ideas, cultural interests, educational aptitude and creativity. These individuals are cultured, aesthetic, intellectual and open. The openness to experience can be connected to activities like writing, science and art.

### *Suggested readings*

Allen B. P (2002), *Personality Theories: Development, Growth And Diversity*, 4<sup>th</sup> Edition, Boston: Allyn And Bacon.

Brody, N. & Ehrlichman, H. (1997), *Personality Psychology: The Science of Individuality*, New York: Prentice Hall.

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Goldberg, L.R. (1990), An alternative Description of Personality: The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59, 1216-1229.

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## *Cognition: Concept and Approaches*

### *Introduction*

In the first unit of this block, you were acquainted with the developmental characteristics of youth. Their ways of thinking, reasoning and interpreting the world were briefly described. The entire arena of how we form concepts and ideas, how we organise our experiences and all the processes like sensation, perception, memory, analysis, generalization etc., which occur in us, relate to our cognitive development. In this unit you will be given a brief description of the process of cognition and the various ways in which different theorists have understood it. The factors which relate to it and variations across individuals will also be discussed. This approach has been followed in order to enable you to form a conceptual understanding which will then facilitate how you view your own learners and the process of cognitive development as it manifests itself in adolescents, youth and young adults in general.

### *Learning outcomes*

After studying this unit, you will be able to :

- understand the concept of cognition;
- delineate and describe the different approaches to human cognition;
- analyse the distinct variations involved in human cognition;
- identify the factors influencing cognition; and
- apply the understanding and insights which you have obtained to explaining the process of cognitive development among youth and young adults.

### *Cognition: an overview*

In order to fully understand the concept of cognitive development, let us undertake the following exercise. Presented below is a list of twelve discrete words. You are expected to classify these words into suitable categories.

RED, BLUE, GOLD, SILVER, ORANGE, PEACH, GREEN, BLACK, YELLOW, IRON, COPPER, LEMON.

.....

.....

.....

Your answers would probably range from colours to fruits to conductors, to alloys, to jewellery etc. The same list of twelve words (stimulus) tends to elicit a different category classification (response) every time you read it, courtesy a different cognitive scheme

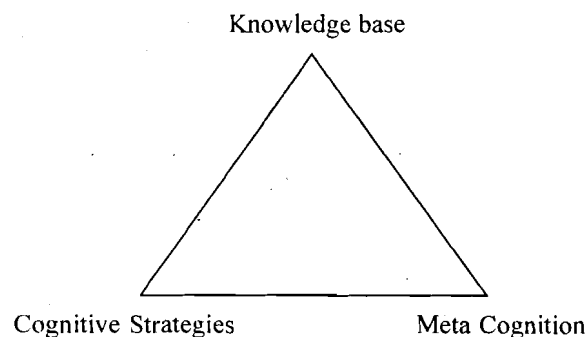
which you have used. Interesting, isn't it? Given the same stimulus, the human mind is akin to reacting so diversely and discriminately. Don't you wonder why? The answer to this mystery is the phenomenon of COGNITION. Let us now try to understand this phenomenon.

Cognition is not a simple concept. Literally to 'cognize' is 'to know', hence, cognition is 'knowing'. As Neisser (1976) puts it "Cognition is the activity of knowing: the acquisition, organization, and use of knowledge." All our mental abilities - perceiving, remembering and reasoning, are organised into a complex system, the overall functioning of which is termed as cognition. This facet allows us to conclude that sensing, attending, perceiving, analysing, etc., are various stages in the pursuit of cognition. (Glass, Holoyoak and Santa, 1979). Cognitivism, as a paradigm involves the scientific study of mental events. These mental events deal with acquiring information, processing, storing and retrieving it. Accordingly, the primary focus in a cognitive analysis of learning is on the learner's mental structure or schema - a concept that includes not only the learner's previous related knowledge and ideas, but also the strategies that the learner might bring to the present situation. In this view the explicit assumption is, that learners are far from equal. and it is the individual's pre-existing network of concepts, strategies and understanding that make experience meaningful and highly individualistic. This is the very essence of the process of cognition.

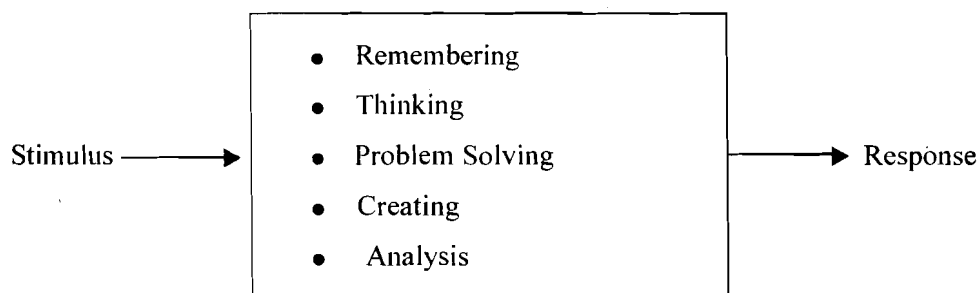
One of the major emphasis of the cognitive approaches deals with the ways in which information is processed and stored. The current modes of cognitive functioning that are termed as the new cognitive sciences, basically look at three things:

- i) the **knowledge base** - the storehouse of information, concepts and associations that we build up as we develop from children into adults;
- ii) the **cognitive strategies** - the processes by which information becomes a part of the knowledge base and is retrieved from it, or is used, and
- iii) **metacognition** which deals with the individual's awareness of the self as a knower and processor of information.

What you have just read is illustrated in the figures 1 and 2 given below:



**Figure 1 Model of new cognitive sciences**



**Figure 2 Human cognitive processing**

You must have realized by what you have read so far, that the study of the process of cognition and cognitive development is extremely significant since it helps us understand the perceptions, abilities and emotions of individuals and has many implications for the teaching-learning process. Not only does it empower educators and psychologists to design an appropriate curriculum, devise pedocentric methodology and construct meaningful teaching aids, it also contributes considerably to the research of newer paradigms.

Apart from these benefits, understanding of the cognitive skills and characteristics of individuals allows us to decipher their pattern of interaction, how they cope with the environment and adjust to it, and the nature of interests they display.

## *Approaches to cognition*

Now that you have understood the concept of cognition and its importance, let us try to comprehend the different approaches to cognition. These are basically the theories of cognition, each offering its own explanation of the process of cognition. Five significant approaches to cognition will be discussed. These include:

- The Piagetian view
- Information processing
- Discovery approach
- Social learning and,
- Constructivism

### *The Piagetian approach*

In Piaget's view, cognitive development is the combined result of the development of the brain and the nervous system, and of experiences that help the individual adapt to his or her environment. He believed that because humans are genetically similar, and share many of the same environmental experiences, they can be expected to exhibit considerable uniformity in their cognitive development.

To explain the process of cognition, Piaget used several new terms drawn from his background as a biologist like - schemata, assimilation, accommodation, adaptation and equilibration. We will now try to understand the implications of each of these.

**The Schema:** As children experience their world, they develop an understanding of it and how it appears to work. Piaget used the term 'schema' to refer to the comprehension that an infant, child, or adult may have about different aspects of his or her world. The word 'schema' is derived from a Greek word which means 'form'. A schema is like a map or an outline. Piaget believed that children develop schemata, or schematic outlines of what the world about them is like, and that these schemata are maintained in the memory. He believed that because of a child's lesser experience and because the child's brain is not fully developed biologically, the child's schema of the world will be qualitatively different from an adult's. Thus children are not merely adults who know less, and conversely, adults are not simply knowledgeable children.

**Adaptation:** During cognitive growth, children develop their schemata and continue to adapt to their environments. Adaptation refers to adjustments to changes in the environment, or the ability to understand and fit in with one's surroundings. Chameleons 'adapt' to their environment when they change colour to fade into the environment. We adapt to the coldness of winter by wearing cardigans to keep us warm. We change our mode and tone of speech according to the person to whom we talk. Adaptation is thus the basic process of all human activity. It consists of the twin processes of assimilation and accommodation.

**Assimilation** refers to the act of taking in information and perceptions in a way that is compatible with the person's current schema of the world. In other words, it means 'construing reality'. A baby assimilates when he or she reaches for a toy. In Piaget's language, he assimilates the toy to his reaching scheme. A child assimilates when he classifies a new object as a suitcase or a vase. Switching on the fan when it is very hot in order to cool off is also an act of assimilation. Classifying a person as someone with leadership potential is also indicative of assimilation.

**Accommodation** refers to the process by which a person adjusts or changes his or her schema to incorporate aspects of an experience not currently represented in his cognitive structure. In other words, it means modifying one's strategies or concepts as a result of assimilation of new experiences or information. So when the baby changes the way he holds his hand as he reaches for round objects as opposed to square ones, he has accommodated. Changing one's concept of leadership after talking to several people with leadership potential is also an act of accommodation.

**Equilibration:** The process of balancing assimilation and accommodation is known as 'equilibration'. By equilibration, Piaget meant a hypothesised drive to maintain an equilibrium between one's schema and the information one obtains from the world. A child shows equilibration when he gives up one learning strategy that may work fairly well for one that works better, such as, moving from rote memorisation to conceptual learning while studying for exams. A researcher shows equilibration when he gives up an old theory because the evidence refutes it, and builds a new theory that handles the evidence better.

Piaget believed, that there is an inner force that drives individuals to actively pursue cognitive adaptation which is referred to as equilibration. This force is what eventually propels an individual forward through the stages of cognitive development.

### Stages of cognitive development

According to Piaget, all individuals follow a common stage wise pattern of cognitive development. They are presented in the figure given below:

Stages	Age in years	Cognitive Characteristics
I. Sensorimotor period	0-2 years	Reflex activity
i) Sub-stage 1	0-1 month	Self investigation
ii) Sub-stage 2	1-4 months	Coordination
iii) Sub-stage 3	4-8 months	Reaching out
iv) Sub-stage 4	8-12 months	Goal-directed behaviour
v) Sub-stage 5	12-18 months	Experimentation
vi) Sub-stage 6	18-24 months	Mental combinations and problem solving.
II. Pre-operational period	2-7 years	
i) Pre-conceptual stage	2-4 years	Emergence of symbolic functions, syncretic and transductive reasoning, Animism
ii) Intuitive stage	4-7 years	Centration on one aspect at a time, Egocentricism

III.	Concrete operational period	7-11 years	Logical operations applied to concrete problems, Decentration, Conservation Seriation, Numeration
IV.	Formal operations period	11 + years through adulthood	Hypothetico-deductive reasoning, Abstract thinking, varieties of reasoning skills

**Figure 3 Piaget's stages of cognitive development**

The above figure shows at a glance, that there are four major stages of cognitive development, each consisting of further sub-stages. Every stage shows some cognitive achievement. Although we will now discuss the stages one by one, it must be pointed out here, that a detailed discussion of each sub-stage is not possible as this is a very extensive task and beyond the scope of this unit, which merely aims at acquainting you with Piaget's theory. Thus, our focus will be on highlighting the main characteristics of each stage.

#### i) Sensorimotor stage

This stage lasts from birth to about two years of age. Piaget chose the term sensorimotor because much of the child's behaviour appears to be determined by stimulus-response (sensori = S, motor = R) arrangements. It consists of six sub-stages which have been mentioned in figure 3. The hallmarks of achievement at this stage are smoother and more coordinated reflex activities, prominent self-investigative behaviour, reaching out reactions and the emergence of more goal-directed behaviour. There is evidence of experimentation behaviour in children at this stage as well. They experiment extensively with objects to obtain their goals and finally at the sixth sub-stage, problem-solving ability based on insight and mental symbols emerges. For example, a child might set her glass of milk on the floor in order to have both hands free to open a door, and after looking at the door and the glass, realise, through a mental image of the door opening, that the glass is in the way. The child might then decide to move the glass to a safer place before attempting to open the door.

By the end of the sensorimotor stage, a child has developed what Piaget referred to as, 'object permanence'. Object permanence is the realisation that objects continue to exist even though they are not presently seen. Thus even in the absence of the actual object, the child can form mental images of its presence. Achievement of object permanence marks the transition of a child to the next stage of cognitive development.

#### ii) Pre-operational stage

This stage lasts from about 2 years to 7 years of age. It is called the pre-operational stage. Children's intellectual development has not acquired the logical operations, or rules of thought characteristic of later stages of cognitive development. In other words, children have not been able to grasp a scientific understanding of cause-effect relationships. The pre-operational stage is divided into two sub-stages: the pre-conceptual stage and the intuitive stage.

The pre-conceptual stage lasts from about two years to four years. It is so named, because Piaget believed that although children show evidence of concept formation and can classify objects into certain categories and groups, this ability is somewhat immature. The concepts thus formed are more like precepts rather than carefully

thought-out absolute concepts. For example, a child might be able to classify a car as a car because he knows that all cars have wheels, doors and move on the road.

However, he will not be able to distinguish clearly the different types of cars, or he may refer to all cars as his father's car. He is thus not able to grasp the uniqueness of an object.

During the pre-conceptual stage, children's reasoning processes are also limited to two kinds of reasoning: syncretic and transductive.

Syncretic reasoning is a type reasoning used by pre-operational children, in which objects are classified according to a limited and changing set of criteria. For example, a three year old child is shown some dolls, some blocks, some toy cars and a box in which all these things are placed, she will show some typical syncretic reasoning. She will immediately place all the dolls together and likewise the cars because dolls go with dolls and cars with cars. She may further place a doll wearing a green frock with a green car because they are both green objects. The blocks and box may be grouped together by the child because the blocks fit into the box. But, if the child is asked whether the box goes with the blocks, she will say no, the blocks go with the box because they fit into it. The child isn't necessarily wrong when she says that the blocks go with the box because she has classified them according to a limited or changing set of criteria (because the blocks fit inside). An adult with a fully developed conceptual understanding might easily have placed a box and blocks together because they are both wooden objects or manufactured items. However, such an advanced classification scheme relies on highly organised and fixed sets of conceptual criteria.

**Transductive reasoning** involves drawing an inference about the relationship between two objects based on a single attribute. For example, children perceive dogs and cats interchangeably based on the reasoning that they both have tails or four legs. Generally, transductive reasoning leads to incorrect conclusions. Transductive reasoning can also lead to animistic thinking, which is common during the pre-conceptual stage.

**Animistic thinking** is the belief that inanimate objects are alive. For example, a child perceives the sun as being alive because it gives out light. An oven is seen as being a live object, because it gives us cakes and biscuits. Mango trees are perceived as being dead when they do not yield fruit.

**The intuitive stage:** The latter portion of the pre-operational period is called the intuitive stage because children's beliefs are generally based on what they sense to be true rather than on what logic or rational thought would dictate. The duration of the intuitive stage is from about four to seven years. Thus, if they are asked to solve a problem they will do so based on what they feel is the correct answer, rather than analysing conceptually what the correct answer should be.

**Egocentrism** is another characteristic trait of this stage. It means being 'self-centred' or perceiving the world only in terms of one's perspective. Children, at this stage cannot understand another's point of view. A child wanting a chocolate will demand it regardless of the fact that the shop may be shut. If he wants to know about an animal that he saw somewhere, he will demand an explanation from his mother even though she hasn't seen it. He cannot understand that she has not seen it.

Pre-operational children's thinking is also rigid. They see things in black and white and good and bad, terms. Rules of games are absolute, and cannot possibly be changed. The more toys you break, the 'worse' the action, regardless of whether you did it on purpose or not. More important, they do not yet have the ability to examine their own thoughts, conclusions or strategies.

### Period of concrete operations (7-11 years)

Operations are logical rules. Pre-operational children as seen earlier, are unable to use logic or mental operations to form concepts, or derive conclusions. The concrete

operations stage marks the beginning of the ability in children to use logical rules in dealing with problems. However, this ability is limited to the concrete or the world which they have directly experienced. They are not able to comprehend the completely hypothetical-to compare what is, with what may be. These concrete operations are specific internal skills or manipulations, such as addition, subtraction, multiplication, division and serial ordering. The child now understands the rule that adding something makes it more and subtracting makes it less; he understands that objects or persons can belong to more than one category at once and that categories have logical relationships. Thus Priti is a girl, she is a human being, she is an Indian, etc., make sense to the child.

An important acquisition at this stage is that of **reversibility**. The child begins to understand that one basic property of actions is, that they can be undone or reversed either physically or mentally, and that one will then get back to the original position. The clay sculpture can be made back into a ball; the water can be poured back into the jug from which it was taken, etc. begun to be understood.

**Decentration**, or the ability to overcome the tendency to focus only on one aspect of a changing system at any given time is another significant aspect of cognitive development, which occurs at this stage. Thus, children's thought processes become more competent, flexible and powerful.

The hallmark of cognitive achievement of this stage however, is the **skill of conservation**. Children are said to be able to conserve when they grasp the fact that amount does not change, even though the form or distribution of materials may change, unless something is added or taken away. Thus, if two equal quantities of water are poured into differently shaped containers, thereby causing a difference in level in their containing vessels, the child who has conserved, will still go by their equality. Likewise conservation is evident in a child if he perceives a ball of clay in its original form and then being rolled into a flat disc, as being the same in terms of amount of clay. In the concrete operations stage children acquire conservation of mass, weight and volume.

Besides conserving, children at this stage are able to engage in three other important logical operations - **seriation**, **classification** and **numeration**.

**Seriation** refers to the ability to deal with classes of objects. For instance, if an eight year old child is shown a bunch of flowers with six red roses and two white lillies and asked whether there are more roses or flowers, she is able to respond correctly. This new found ability to sort sub-classes from the original class and to understand that they are not two equal items but that one is a part of the other is an important cognitive advance.

**Numeration**: Once children obtain an understanding of serial order and classification, they begin to comprehend the sequence of numbers, as well as classes and sub-classes of numbers. For example, a child will come to understand that a group of six is made from three sub-groups of two. This understanding forms the foundation on which concepts such as multiplication and division can be built.

**Logic**: At the concrete operations stage logic is inductive in nature. A child can go from his own experience to a general principle. For example, he can understand that when a new toy is added to a set of existing ones and counted, the set always has one more. He thus learns the general principle that adding always makes a quantity more.

### Formal operations stage

The final step of cognitive development proposed by Piaget, namely, the development of formal operations occurs during adolescence, beginning at about age 12 and continuing into adulthood. The major task of this period is to develop a new, still more powerful set of cognitive skills (formal operations) organised into a structure that allows the adolescent to think about ideas, as well as about objects.

Piaget does not say that this new level of abstraction is achieved all at once the minute a child is twelve. There are steps and sub-stages with fully consolidated formal operations, probably not completed until about age 15 or later. But, he did believe that there was a fairly rapid spurt of development over a period of several years, when the major elements of this new level of abstract thinking were acquired. During the period of formal operations, individuals acquire the ability to make complex deductions, analyse ways of reasoning, and solve problems by systematically testing hypothetical solutions.

Adults and adolescents are able to perceive abstract relationships far beyond the real and concrete. There is a shift in thinking from the actual to the possible. Idealistic thinking is also possible.

**Systematic problem-solving** is another characteristic of this stage. However, thinking up and organising possible solutions to a problem still does not amount to solving the problem. In order to do that, the adolescent must learn to test each of the possible solutions mentally, until he finds one that works. So, another important feature of the stage of formal operations is the ability to search systematically and methodically for the answer to a problem. There is now an appearance of deductive logic in the adolescent's repertoire of skills. In fact, he/she can set up hypotheses and based on deductions, verify or refute them. The adolescent is now capable of hypothetico-deductive thinking.

The adolescent/adult who has achieved formal operations is now equipped with skills of analytical, comparative deductive, and evaluative thinking. The range of cognitive tasks which he/she can engage in is thus vast and includes reflection, judgement, analysis, critical thinking, evaluative thinking and application. This is important for you to know, since the age group which you are dealing with fits into this one.

#### Self-assessment

1. *Knowing that college students show formal operational thinking, what kind of teaching strategies would you employ, keeping their cognitive abilities in mind?*

#### *Information processing approach*

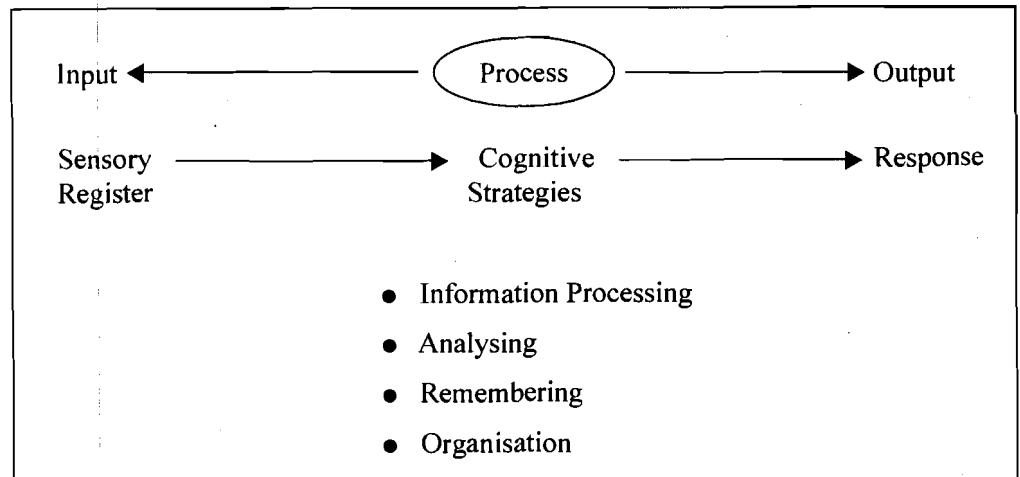
We live in a sensory jungle of information. No matter where we turn, there is a plethora of sights, smells, tastes and tactile sensations. Have you ever wondered how we make sense of this endless array of sensory inputs? How do we process this information? The information processing approach seeks to explain just this. Due to the development of communications technology and the growing impact of cognitivism (an approach in psychology that views people as active learners who transform and structure their knowledge rather than simply acquiring content and writing it on blank slates as the behaviourists feel) made information processing theory a popular approach, as it tried to understand how people acquire information, how they process this information, store it and later recall it, when needed.

Information processing theory rests on a set of assumptions of which three are worth noting. First, information is processed in steps or stages. The major steps typically include attending to a stimulus, recognizing it, transforming it into some type of mental representation, comparing it with information already stored in memory, assigning meaning to it, and acting on it in some fashion (Miller, 1983). At an early processing stage, human beings encode information (represent it in thought) in somewhat superficial ways (as when they represent visual and auditory stimuli as true-to-life pictures and sounds) and at later stages in more meaningful ways (as when they grasp the gist of an idea or its relationship to other ideas). Second, there are limits on how much information can be processed at each stage. Although the absolute amount of

information human beings can learn appears to be limitless, it must be acquired gradually. Third, the human information processing system is interactive. Information already stored in memory influences and is influenced by perception and attention. We see what our prior experiences direct us to see, and, in turn, what we see affects what we know.

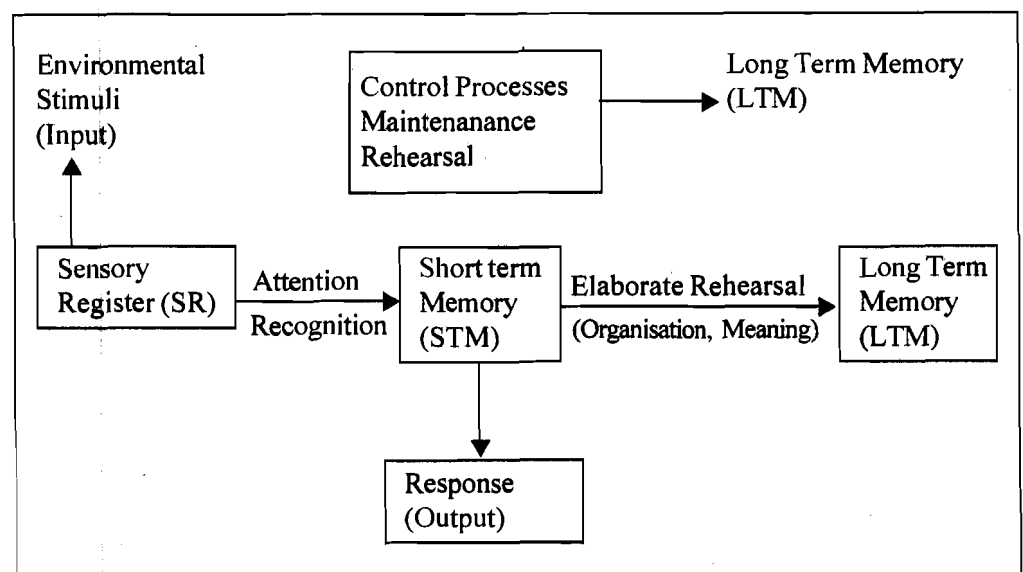
Thus, according to the information processing view, learning results from an interaction between an environmental stimulus (the information that is to be learned) and a learner (the one who processes, or transforms, the information). What an information processing psychologist wants to know, for instance, is what goes on in a student's mind as a teacher demonstrates how to derive a mathematics formula while the student reads a controversial history text or responds to test questions.

Schematically, the information processing approach may be visualized as shown in figure given below



**Figure 4 Information processing view**

To understand how the processing of information actually occurs, let us take a look at, figure 5.



**Figure 5 Information processing process**

You can see from the figure that the model of information processing is composed to three memory stores and a set of control processes that determine the flow of information from one memory store to another. The memory stores are the **sensory**

**register, short-term memory, and long-term memory.** The control processes are **recognition, attention, maintenance rehearsal, elaborative rehearsal, and retrieval.** All these terms are briefly explained below:

The **sensory register** holds information in its original form for two or three seconds, during which time we may recognize and attend to it further.

The process of **recognition** involves noticing key features of a **stimulus** and integrating those features with relevant information from **long-term memory** while the process of attention involves selective focusing on a portion of the information, in the **sensory register**.

**Short-term memory** holds about seven bits of information for about twenty seconds (in the absence of rehearsal). It is often called **working memory** because it contains information we are conscious of. Information can be held in the short-term memory indefinitely through the use of maintenance rehearsal, which is rote repetition of information and it can be transferred from short-term memory to long-term memory by linking the new information to related information in the long-term memory. This process is called **elaborative rehearsal**. The information processing approach uses the computer analogy as its base, making the human mind akin to the processor in a computer responsible for working on the incoming input (sensory register) to get the finished product (the response).

### *The discovery approach : Bruner*

Another significant approach to understanding human cognition was given by Bruner.

He propounded a cognitive model of learning which is prescriptive, and suggested through his theory not only how learning takes place, but also strategies for improving learning.

Bruner strongly advocates the use of discovery in schools, which he defined as the learning that takes place when students are not presented with subject matter in its final form, but rather are required to organise it themselves. This requires the learner to discover for himself the relationships that exist among objects and events. The most important and most obvious characteristic of the discovery approach to teaching is that it requires far less teacher involvement and direction than most other methods. The advantages of the discovery approach are that such learning facilitates transfer and retention increases problem solving ability and motivation (Bruner, 1961). Some of the specific recommendations of this approach are :

- (1) The curriculum of a subject should be determined by the most fundamental understanding that can be achieved of the underlying principles that give structure to the subject.
- (2) Any subject can be taught to any child in some honest form by using an appropriate mode of presentation and representational form.
- (3) A Spiral Curriculum that develops and redevelops topics at different grades is ideal for the acquisition of generic codes.
- (4) A student should be given some training in recognizing the plausibility of educated guess work.
- (5) Audio visual and concrete aids for teaching should be used.

### *Guided discovery*

Some subjects lend themselves more readily to discovery-oriented techniques than do other subjects. For example, some (though by no means all) scientific principles can be discovered by students in guided discovery situations in which sufficient background

information and the appropriate experimental equipment are provided. Similarly, students on field trips can discover a variety of phenomena, although understanding and interpreting these phenomena (and even noticing them in the first place) often require considerable guidance.

The beginning teacher should not make the mistake of assuming that teaching through discovery implies letting students go out on their own with no more than the simple instruction, "Discover." Not only must the processes of discovery be taught - through experience as well as through more didactic procedures - but the student must frequently be given guidance while in the process of discovering. The guidance need not ruin the discovery or destroy its magic. Then it will become a more purposeful pursuit.

Even such prosaic subjects as geography can be taught through discovery. Bruner (1961a) describes how a class of elementary-school children is led to discover important geographical features. Among other things, they are asked where they would establish a settlement if they were exploring an area for the first time. Their reasons for settling in certain areas rather than others gradually lead them to "discover" that major settlements should be at the confluence of rivers and near natural harbours. Thus, studying geography becomes an activity of discovering relationships between the environment and humans rather than simply of memorizing maps and related data.

#### Self-assessment

2. *Can the principle of the combustion engine be discovered by an eighth-grade class? What might be the major features of a guided discovery lesson that you could design for this purpose?*
3. *In your subject area, plan a lesson on any topic which is of interest to your learners based on the discovery approach. Ask them to write an experiential report on how they felt in the class using this method.*

#### Vygotsky's socio-cultural theory

Like Piaget, Vygotsky also believed that children are active seekers of knowledge, but cognition, he felt, was a collaborative effort of the child and the socio-cultural environment. According to him, infants are endowed with basic perceptual, attention and memory processes which are common to other animals as well. These develop naturally in the first two years of life. However, once the child has acquired language skills and has become capable of mental representation, his ability to participate in social dialogue surrounding culturally important tasks is enhanced. This leads to the development of the ability of the child to converse with himself in a manner similar to conversing with others. As a result, the child's basic mental capacities are transformed into uniquely human higher cognitive processes.

According to Vygotsky, children use private speech for self-guidance and self-direction. With age however, private speech becomes transformed into silent inner speech or verbal thought. The origin of private speech is traced to social interaction between the child and more mature members of society. Vygotsky felt that through joint activities with more mature members of society, children come to master activities and think in ways that have meaning in their culture. A special concept, the zone of proximal (or potential) development is used to explain this.

The zone of proximal development refers to a range of tasks which the child can achieve only with facilitation from adults and more skilled peers. As the child interacts with these persons through cooperative dialogue, the language used becomes part of the child's private speech which then operates in the child's individual context in the same way. In this way, children are solitary agents but are assisted by significant others in the process of cognitive development.

Two very crucial pedagogical techniques which emerge from the Vygotskian perspective are assisted discovery and cooperative learning. In assisted discovery, the role of the teacher would be to guide children's learning with explanations, demonstrations and verbal prompts based on each child's zone of proximal development.

In cooperative learning, peer collaboration guides a child's learning.

From the four approaches to cognition which you have just read, you must be wondering why many examples were drawn from children's contexts. Actually, the goal was to tell you how the patterns of cognition remain the same in the childhood and adult years; it is only the complexity of cognition which undergoes a change. You will now be in a position to realize that individuals are likely to differ with respect to their cognition and that a number of factors may account for these. Let us, in the next section, take a look at the various ways in which individual variation in cognition occurs.

#### **Self-assessment**

4. *Make a list of the various ways in which our culture influences us in how we think, analyse and reason.*

### ***Individual variations in cognition***

In any classroom situation, we find a wide variety and range of learners. Each pupil is different from the other and differences can also be seen in their learning level. Perhaps they follow their own style of learning as well. Some try to grasp the content just by listening and some pupils try to learn slowly while some pupils are very quick. A teacher should have the knowledge of individual differences in order to accommodate them in the classroom, to help her learners realize their potential, optimally. This knowledge would also help her to plan out her instructional objectives, strategies and content in such a way that it solicits attention and interest from all her learners. Let us look at these individual variations one by one. You may recall that cognition is the act of human information processing. Cognitive processes include the everyday activities of sensing, attending, perceiving, remembering, learning, comprehending and problem-solving. People perceive, cognize and acquire knowledge in different ways. Variations also emerge from the process of interpretation, organization and conceptualization of knowledge, gained through the perceptual process.

#### ***Attention and perception***

Attention is a familiar process, closely related to the acquisition and retention of information, focusing on a particular object or stimuli within the field of awareness. The individual perceives the stimuli by sensing and attending to it. The attention process bridges the gap between sensation and perception. Perception is a much more complex process involving past knowledge, awareness, etc. It involves arriving at the meaning, often leading to action. Perception involves an active interaction between the perceiver and the environment and the past experience and learning of the individual. Every new perception results in new learning. All the individual factors such as moods, feelings and motivation might influence perception from moment to moment, or from person to person depending on a number of factors like maturity, past training and cultural preferences. The particular mode of cognition adopted tends to become characteristic of the individual across different kinds of learning situations, even contents. Thus qualitative and quantitative changes in perception take place in the course of individual development. To a great extent, the organism plays an active role in learning and organizing his or her experiences. Perceptual capacity may be inborn,

but the ability and style develop gradually along with the development of other processes and stability and abstraction become possible as the individual develops. In fact, every individual gradually develops a style of perception, which evolves from learning and experience.

### *Cognitive styles*

Cognitive styles refer to the manner in which individuals differ in certain dimensions and the way in which they handle the perceptual experiences (how an individual receives processes and integrates information). People are classified into two broad categories basing on cognitive styles, the **field-dependent** and the **field-independent**. Independent individuals are able to overcome the influence of the field and contextual factors and approximate the reality much more accurately than the field-dependent people.

Individuals also differ in other dimensions, **concrete-abstraction** and **active-reflective**. Based on this model, Guild and Garger have indicated that there could be four styles of learners. Cognitive styles have also been adjudged on the basis of other dimensions like concretization - abstraction and active - reflective mode. Based on this Guild and Garger have identified four different cognitive styles.

- The first type of learner relies on concrete sensing, is reflective, is very much influenced by his own personal values and integrates cognitive experiences with his beliefs and feelings etc. He/she is described as the **concrete - reflective** type.
- The second type of learner who may be described as **abstract - reflective**, emphasizes on facts, accuracy, cognition and the right answer and integrates the experience with what he / she knows.
- The third type of learner may be described as **abstract - active**, oriented towards thinking and abstracting, the emphasis is on active learning. He or she is pragmatic and value-oriented.
- The fourth type of learner is **concrete - active**, relies very much on concrete sensing and feelings, oriented towards assessing relationships and connections among the different elements. He or she seeks to facilitate the cognitive process in others.

Individual learners can also be distinguished based on styles of perceiving and judging in terms of **levellers** and **sharpeners**. It has been found that levellers tend to be rather rigid in their beliefs, attitudes and social judgements. They tend not to perceive those elements of reality, which run counter to their existing beliefs, thus, seeing reality as validating the beliefs and vice versa. Sharpeners, on the other hand, are more flexible, tend to notice all evidence, which challenge their beliefs and assumptions and are thus ready to change their beliefs to fit reality rather than misperceive reality to fit their beliefs. They look for change and difference in every new experience.

Learning is nothing but an ability to look at objects, persons and situations relative to a stable and a meaningful perspective, which results in a more effective adaptation. A child may find it difficult to understand the process of multiplication, but soon discovers a new meaning that multiplication is nothing, but cumulative addition.

### *Learning style*

Learning styles include the characteristics, cognitive, affective and physiological behaviour that serve as indicators of styles. Learning styles may vary and are influenced by learning-set, past experiences and motivation. Learning styles may be regarded as a link between the personality and cognitive behaviour of the learner.

Based on learning styles, learners have been classified into four types:

**The accommodators:** They prefer to look for more information and details and are believers in schematic (simplified) and planned learning based on information. They are the ones who look for sequence and proper order in their learning - perhaps they are the conformists. Such learners are concrete in their perception and look for evidence for whatever they are told. They need to be convinced of whatever is presented to them - the cautious and steady type.

**The convergers:** They look for immediate relevance and practical use of whatever they are expected to learn or required to learn. Very often we come across people who ask questions like "What is the use?" In their view, learning can be effective only if they can see practical relevance and usefulness of knowledge. Convergers are the ones who raise questions about the practical relevance. It is necessary that such people feel convinced about the purpose of the learning and its utility. The pity is that sometimes the utilitarianism gets reduced to the level of being important from the point of view of examinations. Unfortunately, our exam-oriented system seems to reinforce such styles.

**The divergers:** Divergers, on the other hand, are very different from the above. They look for different meanings and also look at issues and topics from different angles. Thus they are the opposite of convergers. They would like to be the blind, (men describing the elephant) but without being blind. They look for all possibilities. This makes them often impatient. For example, bright students learn their learning material very quickly or they finish the given task in minutes and find it difficult to sit patiently. They are impatient and they also disturb the other students. They want their work to be challenging. They should be given challenging work depending upon their ability. They are the inquisitive ones, charm the teacher and also irritate the teacher.

**Assimilators:** They are the philosophers or the abstractors, who look for ultimate meaning and messages. They think and go beyond the context of people and situations, and like to debate and dialogue and enjoy emergent knowledge. In a way they are the discoverers.

In any classroom one can find learners with all these different styles, though perhaps, no prediction can be made about the proportion of each in a particular classroom. It is also possible that some of them are able to develop a contingency approach, shifting-styles, depending on the situation or the context.

### *Intelligence*

We have already discussed this concept in the previous units. Let us once again discuss what self concept means. An Individual who is intelligent is able to adapt to his surroundings effectively. Intelligence denotes the capacity to learn or profit from experience. It is both a general mental ability and also a personal, unique, individual pattern of specific abilities in an individual. Cognition, memory, creativity may all be specific abilities indicative of intelligence. The learner's past record, his day-to-day adaptive experiences, his behaviour, his choices, his pursuit of interests, his cognitive approaches and strategies are all indicators of his intelligence.

### *Self concept*

We have already discussed this concept in the previous Units. Let us once again discuss what self concept means.

As persons grow and develop, they pick up ideas about themselves - their talents, potentialities, their weaknesses and inadequacies. This network of ideas about oneself formulates what is known as 'self concept'. Each individual carries a detailed set of ideas about himself - what he can do and what he can't do, how he looks, what he feels, how he compares with others - all these are collectively called his self concept.

The formation of self concept is both a cognitive accomplishment as well as an understanding of self.

Self concept is a very important issue since our behavior, choices, interpersonal relationships, world views etc. are affected by it. The individual's beliefs about himself colour his actions and interactions. For example, a person who feels he can't articulate his ideas well, will try to avoid participating in discussions and debates out of worry and anxiety about failure. On the contrary, a person with a positive self concept about his expression and communication seeks opportunities to do better, enhancing the self fulfilling prophecy and excelling furthermore in the area.

Self concept is very important in matters of learning and cognition because it ascertains individual differences in learners, in terms of learning orientation, perception about self, cognitive styles, choice of material to be learnt and learning strategy. Self concept is responsible for motivating an individual, making him self-determined, eager to succeed and on the route to realization of his/her potential.

### *Emotional health of the individual*

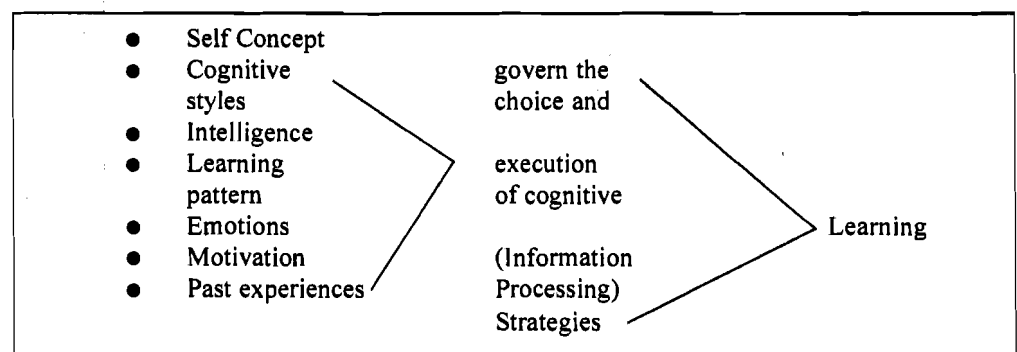
Emotional health refers to the person's emotional state at any given point of time. Positive emotional health leads to an individual experiencing mostly positive emotions thereby leading to a positive self image and self concept. It also enables persons to channelize their emotions effectively and adjust better with the world at large. Negative emotional health on the other hand is self deprecating and leads to poor self concept, anxiety and learned helplessness.

### *Readiness to learn*

Non performance on the part of the students or their failure to achieve a concept or task set up for them can be explained in terms of lack of adequate readiness to learn. As the term implies, there is a best or appropriate time for a child to learn a specific thing quickly, easily and efficiently. This 'readiness to learn' comes about when his physical, neural, intellectual, social and emotional advancements have reached a stage wherein he is equipped to perceive the problem and to solve it with relative ease.

Cognitive readiness is another specific aspect of the readiness to learn and a very important factor in teaching learning processes.

To understand the role of individual variations in cognition and learning, study the figure given below where the linkages are clearly represented.



**Figure 6 Role of individual variations in learning**

### *Summary*

Cognition is the activity of knowing - the acquisition, organisation and use of knowledge i.e., all our higher order mental abilities like perceiving, remembering, analyzing, organization etc. fall into this domain.

This unit dealt with the various approaches to human cognition namely, the discovery approach (Bruner), the information processing approach, the developmental approach (Piaget) and the social constructivist approach (Vygotsky). It also examined the individual variations in cognition like self concept, intelligence, cognitive styles, learning styles etc., responsible for cognitive differences among the range of individuals thrown together in a classroom situation. This unit attempted to highlight the various orientations to cognition in order to give you insights about knowing and understanding your students and other individuals whom you interact with. For those of you who are teachers, many instructional strategies may be derived based on what you have read so far.

### *Unit-end exercises*

1. From Piaget's point of view, why is it wrong to think of children as "small adults"?
2. You are a teacher of Physics. How would you use discovery learning to make the teaching - learning process more meaningful in your subject.
3. Who is your favourite person in the world? What are some of the facts you imitate from this individual and why?
4. How do individual variations in cognition influence the teaching - learning process? Give illustrative examples.
5. Out of all the factors discussed here which according to you is most essential in determining an individual's cognitive style? Why?

### *Suggested readings*

- Benjafield, J.G.(1990), *Cognition*, New Jersey : Prentice Hall.
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## 4

*Intelligence and Creativity: Concept, Theories and Strategies for Development**Introduction*

In the previous units of this block you have already been acquainted with the developmental needs and characteristics of college students and young adults and the ways in which they reason, perceive and understand the world. You must have also developed an understanding of the different aspects and constituents of their personality. In the present unit, the focus will be on acquainting you with the concepts of intelligence and creativity, so that with the insights which you develop, you will be able to appreciate the manifestations of these among your students and make conscious efforts to nurture and facilitate them. Both intelligence and creativity are evolutionary concepts which require elaborate discussion. An attempt is made in the present unit in this direction.

*Learning outcomes*

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

- define intelligence;
- understand the theories of intelligence;
- become acquainted with the latest developments in this area;
- understand the nature - nurture debate in intelligence;
- identify ways to foster intelligence;
- define creativity;
- become aware of the theories of creativity;
- identify obstacles to creativity;
- discover the sources of creativity; and
- become aware of the strategies to foster creativity.

*Intelligence defined*

It is extremely difficult to define the term **intelligence**, since it has been interpreted in various ways by different theorists and researchers. From a general mental ability, to a set of specific abilities, to a general adaptation to the changing environment, to excelling in a particular sphere of exercise be it academics, sports, social behaviors, emotional control etc. all have been used as defining parameters of intelligence. The concept of intelligence as a quotient represented by IQ has dominated the field of intelligence for over a hundred years. Recently it has been replaced by EQ or the

emotional quotient and the SQ or the spiritual quotient. The latter is still in its very initial stage of articulation, but the movement from IQ to EQ to SQ shows a significant evolution in the understanding of the term. Irrespective of the point of emphasis in each of the definitions however, operationally, especially in the context of young adults' intelligence may be defined as a combination of the abilities to

- **learn.** This includes all kinds of informal and formal learning through any combination of experience, education, and training.
- **pose problems.** This includes recognizing problem situations and transforming them into more clearly defined problems.
- **solve problems.** This includes solving problems, accomplishing tasks, fashioning products, and doing complex projects.

According to this definition of intelligence, each of us can become more intelligent. We can become more intelligent through study and practice, through access to appropriate tools, and through learning to make effective use of these tools (Perkins, 1995).

## *Theories of intelligence*

Having operationally defined intelligence, let us now try to understand the different theories of intelligence. Psychologists who study intelligence have argued chiefly about two questions.

- Is intelligence singular, or does it consist of various more or less independent intellectual faculties?
- Is intelligence (or are intelligences) largely inherited?

Most of the theories which will be presented to you in this section, address these questions either directly or indirectly. Although the number of theories of intelligence is large, an attempt is being made to present some of the key perspectives to you, especially since they will enable you to appreciate the potential of your learners better. Let us examine them one by one.

### *Psychometric theories of intelligence*

Psychometric theories of intelligence are based on statistical analyses of conventional tests of intelligence, requiring students to show basic vocabulary, mathematical ability, and reasoning, as well as other skills. According to this view, intelligence consists of a combination of several specific components or abilities. This idea was evident in the writings of the intelligence -testing pioneer, Alfred Binet (1916). He suggested three elements of intelligence

- **Direction:** knowing what to do and how to do it
- **Adaptation:** figuring out how to perform a task and then monitoring the strategy while you do the actual task
- **Criticism:** the ability to critique your own thoughts and action.

According to Charles Spearman (1927), intelligence could be understood in two kinds of underlying dimensions or factors. The first is what he called the "g" factor or general intelligence factor. This factor consists of all the general knowledge that all people have. The other factor is known as the "s" factor. This includes specific skills and information that is needed to perform certain tasks. Spearman felt that scores on IQ tests were determined by both of these factors, but he laid emphasis on the "g" factor.

Thurstone (1938), suggested that the core of intelligence resides not in one factor but in seven basic inter-related factors or primary abilities. According to him, the primary mental abilities are:

- **Verbal comprehension:** vocabulary, reading comprehension, verbal analogies, and the like.

- **Word fluency:** the ability to quickly generate and manipulate a large number of words with specific characteristics, as in anagrams or rhyming tests.
- **Number:** the ability to quickly and accurately carry out mathematical operations.
- **Space:** spatial visualizations as well as the ability to mentally transform spatial figures.
- **Associative memory:** rote memory.
- **Perceptual speed:** quickness in perceiving visual details, anomalies, similarities, etc.
- **Reasoning:** skill in a variety of inductive, deductive, and arithmetic reasoning tasks.

Raymond Cattell (1968) in his attempt to explain intelligence, spoke about two types of intelligence; fluid and crystallized which typically occurred in persons.

**Fluid intelligence** was described as the ability to develop techniques for solving problems that are new and unusual, from the perspective of the problem solver. It is based on spatial and visual imagery.

**Crystallized intelligence**, in contrast, referred to the ability to bring previously acquired, often culturally defined, problem-solving methods to bear on the current problem. It is based on reasoning, problem solving, and verbal skills.

Guilford's model of intelligence describes human intellectual functioning in terms of **operations**. It includes major intellectual processes such as knowing and remembering. It is applied on **content** and cognitive information in the form of numbers, symbols or words for example, to yield a **product**. The result of processing information, is describable in terms of forms such as units, classes, relations or implications. The model yields 150 separate abilities.

You must have concluded after reading this approach that it is very measurement oriented and seeks to quantify the concept of intelligence.

### *Development theory of intelligence*

This has been given to us by Jean Piaget. According to **Piaget**, intelligence is an active process involving progressive adaptation through the interplay of assimilation and accommodation. The results of intelligent activity are manifested in cognitive structures. Thus, all humans are intelligent but the specific form which intelligence takes is governed by the developmental age of the child and the social and cultural experiences which he/she has in the environment. The complexity of a person's adaptation keeps on increasing with age and maturational development. According to Piaget, the cognitive structures of babies, young children, older children and adults are different in the form which they take, which explains why adults are different from children in terms of how they think or interpret a situation. Thus, while children display simple forms of thinking and reasoning based on sensory experiences in their early years of life, slightly older children can engage in concrete operations and understand simple principles, cause-effect relationships and can also generalize and apply the knowledge which they have constructed and learnt. Adolescents and young adults on their part have the capacity for more complex and abstract forms of thinking and reasoning reflected in their abilities to judge, analyse, reflect, evaluate and falsify.

### *Theory of multiple intelligences*

This is a more recent conceptualization of intelligence. According to Howard Gardner (1980), a single number (a score on an IQ test) cannot adequately represent the complex and diverse capabilities of a human being. He has proposed a theory of multiple intelligences. He originally identified seven components of intelligence (Gardner, 1983). He argues that these intelligences are relatively distinct from each other and that each person has some level of each of these seven intelligences. More recently, he has added

an eighth intelligence to his list (Educational Leadership, 1997). The theory is presented in its operational form in the figure below.

**Intelligence and Creativity: Concept, Theories and Strategies for Development**

Intelligence Area	Is strong in	Likes to	Learns best through	Examples
Verbal-linguistic	reading, writing, telling stories, memorizing dates, thinking in words.	read, write, talk, memorize, work at puzzles.	reading, hearing and seeing words, speaking, writing discussing and debating.	Poets, writers, orators, communications.
Logico-mathematics	math, reasoning, logic, problem-solving, patterns.	solve problems, question, work with numbers, experiment.	working with patterns and relationships, classifying, working with the abstract.	Mathematicians, logicians.
Spatial	reading maps, charts, drawing mazes, puzzles, imaging things, visualization.	design, draw, build, create, daydream, look at pictures.	working with pictures and colours, visualizing, drawing.	Sailors navigating without modern navigational aids, surgeons, sculptors, painters.
Bodily-kinesthetic	athletics, dancing, acting, crafts, using tools.	move around, touch and talk, body language.	touching, moving, processing knowledge through bodily sensations.	Dancers, athletes, surgeons, crafts people.
Musical	singing, picking up sounds, remembering melodies, rhythms.	sing, hum, play an instrument, listen to music.	rhythm, melody, singing, listening to music and melodies.	Musicians, composers.
Interpersonal	understanding people, leading, organizing, communicating, resolving conflicts, selling.	have friends, talk to people, join groups.	sharing, comparing, relating, interviewing, cooperatomeg.	Sales people, teachers, clinicians, politicians, religious leaders.
Intrapersonal	understanding self, recognizing strengths and weaknesses, setting goals.	work alone, reflect, pursue interests.	Working alone, doing self-paced projects, having space, reflecting.	
Naturalist	understanding nature, making distinctions, identifying flora and fauna.	be involved with nature, make distinctions.	Working in nature, exploring things, learning about plants and about plants and natural events.	
Existential	Still Under Research.			

**Figure 1 Multiple intelligence areas and their manifest features**

This approach, you must have realized, defines the nature of an individual and his / her capabilities in all spheres of his / her being.

#### Self-assessment

1. *Imagine that you have asked a student to write a book review or a report.*
  - i) *What will be expected of her in terms of abilities?*
  - ii) *How would the different theories of intelligence interpret this task?*
2. *The principal of your college has asked you to organize a national level symposium. You can choose eight students to help you with it. You have to ensure that each team member contributes favorably in some way to the task. How will you choose the students?*
3. *For each of the eight intelligences in the Howard Gardner list, think about your own level of talents and performance. For each intelligence, decide if you have an area of expertise that makes substantial use of the intelligence. Also reflect upon how you will develop it.*

#### *Information processing theory of intelligence*

This theory has been given to us by Sternberg. His early work built on the standard psychometric conception of intelligence as a single, general trait (Spearman's *g*). His **componential theory** broke "*g*" down into its underlying information processing components. However, Sternberg found that even his **componential theory** and the tests he developed to measure the component processes still missed a lot. Individuals who scored highly on Sternberg's early test, still were not guaranteed success and many individuals who did not score as well, went on to have a better record of real life accomplishments than did those who scored well on his or on other traditional tests. This led him to move beyond the componential theory to what is now known as the **triarchic theory** of Intelligence. The **triarchic theory** does not disprove either "*g*" or his earlier componential theory, but rather subsumes them under a larger framework.

The **triarchic theory** posits three facets that make up what we call intelligence (and for Sternberg that term, when properly defined and measured, must translate into real life success). The three facets are: **analytical intelligence**, which is similar to the standard psychometric definition of intelligence and corresponds to his earlier Componential Intelligence. It is measured by analogies and puzzles and reflects how an individual relates to his internal world; **creative intelligence** which involves insight, synthesis, and the ability to react to novel stimuli and situations. This is the experiential aspect of intelligence and reflects on how an individual connects the internal world to external reality; **practical intelligence**, which involves the ability to grasp, understand, and solve real life problems in the everyday web of life. This is the contextual aspect of intelligence, and reflects how the individual relates to the external world about him. In short, practical intelligence is what is also known as "street smart." Sternberg strongly believes that intelligence can be increased by study and practice.

#### *David Perkin's view*

In his book, entitled "Smart Schools," David Perkin's (1992) analyses a number of different educational theories and approaches to education. According to him, education can be considerably improved by more explicit and appropriate teaching for transfer, focusing on higher-order cognitive skills, and the use of project-based learning. He believes that IQ has three major components or dimensions.

**Neural intelligence:** This refers to the efficiency and precision of one's neurological system. It has a "use it or lose it" characteristic and can be maintained and increased

by use. Mother's diet and health during pregnancy has a direct impact on its development.

**Experiential intelligence:** This refers to one's accumulated knowledge and experience in different areas. It can be thought of as the accumulation of all of one's expertise. Experiential intelligence is based on several years of accumulating knowledge and experience in both informal and formal learning environments. Such knowledge and experience can lead to a high level of expertise in one or more fields. People who live in "rich" learning environments have a significant advantage over people who grow up in less stimulating environments. Experiential intelligence can be increased by such environments.

**Reflective intelligence:** This refers to one's broad-based strategies for attacking problems, for learning, and for approaching intellectually challenging tasks. It includes attitudes that support persistence, systemization, and imagination. It includes self-monitoring and self-management. Reflexive intelligence can be thought of as a control system that helps to make effective use of neural intelligence and experiential intelligence. A person can learn strategies that help to make more effective use of neural intelligence and experiential intelligence. The habits of mind included under reflective intelligence can be learned and improved. Metacognition and other approaches to reflecting about one's cognitive processes can also help.

#### Self-assessment

4. Now that you have read about the various theories of intelligence take a few moments to integrate what you have read with ideas of your own. Choose one of the theories.
- Describe how you would teach students a concept in a way that takes the key aspects of that theory into account?
  - How would you teach students the same concept if you were including the ideas of a different theory of intelligence?
  - Present your plan structure/ outline.

### *Latest issues in intelligence*

As indicated earlier, the field of 'intelligence' is very dynamic and thus prone to a number of new concepts and ideas from time to time. You will be given a glimpse of some of them in the present section. They will enable you to enrich your understanding further.

#### *Moral intelligence*

Of relatively recent origin is the concept of moral intelligence. Moral intelligence is the ability to distinguish between right and wrong. Broadly conceived, it represents the ability to make sound decisions that benefit not only yourself, but others around as well you (Coles, 1997; Hass, 1998). Some of the great leaders who heralded movements, took responsibility for them and improved the lives of many beneficiaries in the process, may be said to be high on moral intelligence.

#### *Social intelligence*

Another, new concept which has emerged is that of social intelligence. Social intelligence is the ability to understand other people with reference to what motivates them, how they work and know how to work co-operatively with them. Successful sales persons, politicians, teachers, clinicians, and religious leaders are all likely to be individuals with high degrees of social intelligence. Social intelligence may be perceived as interpersonal intelligence.

## Emotional intelligence

The concept of emotional intelligence has been advanced by Goleman (1995.) Emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions. Emotional intelligence involves abilities that may be categorized into five domains:-

**Self-awareness** or observing oneself and recognizing a feeling as it happens.

**Managing emotions** or handling feelings so that they are appropriate; realizing what is behind a feeling; finding ways to handle fears and anxieties, anger, and sadness.

**Motivating one** or channelising emotions to realize of a goal; emotional self control; delaying gratification and stifling impulses.

**Empathy** or sensitivity to others' feelings and concerns and taking their perspective and appreciating the differences in how people feel about things.

**Handling relationships** or managing emotions in others; social competence and social skills.

All meaningful relationships such as parent-child, teacher-student between colleagues at work etc., which we cherish and perceive as our strengths, are usually based on dimensions of emotional intelligence.

### Self-assessment

#### 5. Test Your Emotional Intelligence

*This is a self administered test designed to assess emotional intelligence. Twenty statements are given below, each followed by five possible responses (always, usually, sometimes, rarely and never.) Read each statement carefully and out of the five possible responses, choose the one, which seems to you to be the most appropriate response for a particular situation.*

	Always	Usually	Sometimes	Rarely	Never
1. I extend help to anyone who is in need without expecting any return					
2. I am very sensitive and responsive to the feelings of others					
3. I do not allow my emotions to spoil my relations with others. I am always in control of my emotions.					
4. If someone harms me in any way, I do not forget it easily; I am on a lookout to retaliate in the same way.					
5. I never have problems adjusting with any kind of person. 6. I feel guilty for any wrong I might have done in the past.					
7. I try to share others grief or turmoil, I am sympathetic and caring when someone is in trouble.					
8. Between the two, I get more happiness and peace of mind in giving rather than taking.					
9. I solve a problem as soon as I confront it, and it keeps me free from worries.					

10. I look at my problem with an open mind; I never allow my feelings and emotions to hijack my decisions and actions.					
11. My feelings are one with a suffering person. I try to spend time with that person and share his grief and sorrow.					
12. Certain situations and some people evoke revulsion in me.					
13. I get hurt very easily. On such occasions I feel humiliated and degraded.					
14. I cannot express myself fully before others. I am generally inhibited in my behaviour.					
15. Emotionally, I am bland. I do not get disturbed even at the suffering of my near and dear ones.					
16. I set realistic goals and pursue them with tenacity.					
17. I have good insight into my thinking and actions and I am in complete control of my behaviour.					
18. I never react when I am angry. I analyze each situation thoroughly when I am cool and then react.					
19. For me two plus two is always five. I remain optimistic even in the face of repeated failure.					
20. I have a positive attitude in life; I always help people whenever I can. I do not work against the interest of anyone.					

**Source:** Dr. K.D. Broota (2002), *Introduction To Psychology : Textbook For Class XI*, New Delhi, NCERT.

### Scoring

Always — 4

Usually — 3

Sometimes — 2

Rarely — 1

Never — 0.

Reverse the scores for statements 4, 6, 12, 13, 14, and 15.

Total all the scores

### Interpretation

Scores between

60-80 — High on emotional intelligence

40-59 — Medium on emotional intelligence

20-39 — Average on emotional intelligence

Below 20 — Poor on emotional intelligence.

### *Artificial intelligence*

There has in recent years, been much talk and debate on the concept of artificial intelligence. Let us see what it means. Artificial intelligence is a branch of science and engineering which deals with the making of intelligent machines, especially intelligent computer programs. It is related to the task of using computers to understand human intelligence. This generally involves borrowing characteristics from human intelligence, and applying them as algorithms in a computer friendly way. AI is generally associated with Computer Science, but it has many important links with other fields such as Math, Psychology, Cognition, Biology and Philosophy, among many others. Artificial intelligence aims to improve machine behaviour in tackling such complex tasks. AI research is allowing us to understand our intelligent behaviour. Humans have an interesting approach to problem-solving, based on abstract thought, high-level deliberative reasoning and pattern recognition. Artificial intelligence can help us understand these processes by recreating them, then potentially enabling us to enhance them beyond our current capabilities.

Other, contemporary concepts of intelligence deal with leadership intelligence (LQ), executive intelligence (EQ or ExQ), and even financial intelligence (FQ) all of which are meaningful concepts for institutional settings. They lead us into the notion of context specificity, even in the field of intelligence.

### **Some interesting facts and issues in human intelligence**

Some interesting facts have been gathered to give you an understanding of the all pervasive nature of intelligence. Read these facts and try to draw some inferences from them.

Poverty - Low IQ is a strong precursor of poverty, even more so than the socioeconomic conditions in which people grow up.

Schooling - Low IQ raises the likelihood of dropping out of school before completing high school, and decreases the likelihood of attaining a college degree.

Unemployment, idleness and injury - Low IQ is associated with persons who are unemployed, injured often, or idle (removed themselves from the workforce).

Family Matters - Low IQ correlates with high rates of divorce, lower rates of marriage, and higher rates of illegitimate births.

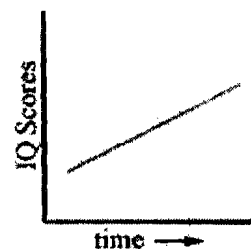
Parenting - Low IQ of mothers correlates with low birth weight babies, a child's poor motor skill and social development, and children's behavioral problems from age 4 and up.

Crime - Low IQ increases the risk of criminal behavior.

Ethnic differences in cognitive ability - East Asians typically earn higher IQ scores than white Americans, especially in the verbal intelligence areas.

Increased use of video games improves spatial awareness and reaction time.

James R. Flynn (1994) discovered that IQ scores increased from one generation to the next. This interesting phenomenon has been called "the Flynn effect."



Depression interferes with memory and concentration. Psychological tests show that feelings of rejection can dramatically reduce IQ by about 25%. Besides, rejection leads to increased feelings of aggressiveness and reduced self-control. Self-control is regarded as necessary to perform well in IQ tests.

The brain weighs less than 2.5% of our total bodyweight, but accounts for 20% of our energy consumption when we're at rest. It burns oxygen and glucose at ten times the rate of the other body organs.

Learning and intelligence: research has indicated that there is little correlation between assessed I. Q. and what people are able to learn and do in the real world. Many cognitive researchers are proving that intelligence is, in fact, an open, dynamic system, modifiable at any age and ability level.

**Source:** These facts have been collected from different websites on intelligence.

The facts in the above box must have enabled you to appreciate the enormity and the all encompassing character of intelligence. It affects all arenas and aspects of human behaviour.

### *Intelligence: nature versus nurture debate*

You must have often wondered where your own intelligence has come from. Did you inherit it from your parents or did it develop somewhere—from the kind of life experiences which you have had? These questions may still be bothering you as they continue to bother psychologists. Whether heredity is more important or the environment more significant in the development of intelligence, is called the nature v/s nurture debate. Let us read about it.

Both the quality and the quantity of our memory and our cerebrum, depend on the genetic material passed on to us by our ancestors. These essential components of our brain express themselves in the number and connectivity of our neurons. Apart from our genetic inheritance, our intelligence is affected by our prenatal development, our postnatal growth process and our environment as well.

Both genetic and environmental factors have a bearing on the quality of our brain and thus on our ability to compute accurately and successfully. Severe nutritional deprivation and the resulting deficiencies in brain tissue are well established as a cause of mental sub normality. It is interesting to note that such environmental influences can only result in a degradation of mental processes below the norm, but they have never been established to be the cause of intelligence above the norm.

The other major factor determining the level of our intelligence is also traceable to our genetic heritage: our temperament, the measure of our emotions is genetically imposed on human beings. So are other predispositions ranging from alcoholism to schizophrenia, from musical genius to colour-blindness and just about anything and everything that establishes the essence of being human.

Our brain depends approximately 80% on inherited factors, our genes, and 20% on environmental conditions. Therefore we can safely conclude that our ability to integrate and process information is genetically imposed on us and is by far the most influential determinant of our ability to cope with changes in our environment. The environment is the route through which this development occurs. It is important to understand that if the environment is not conducive, the development of intelligence will be inhibited. Likewise some gains in competence levels of children have been reported in research, by enriching the environment. However, the nature - nurture debate continues and intelligence and its development are best understood as an interaction of these two aspects.

### Self-assessment

6. *What do you think is more important in leading someone to achieve good grades, genes or the environment? Why?*

Read and ponder over what is presented below:

Is intelligence (or are intelligences) largely inherited? This is, by and large, a Western question. In the Confucian societies of East Asia, individual differences in endowment are assumed to be modest, and differences in achievement are thought to be due largely to effort. In the West, however, many students of the subject sympathize with the view — defended within psychology by Lewis Terman, among others — that intelligence is inborn and one can do little to alter one's intellectual birthright.

In spring 1998, Robert Plomin claimed to have discovered a gene linked with intelligence. However, not all individuals are endowed with the same intelligence and many believe this must have something to do with our genes and the way they interact with the environment. Identical twins are more likely to obtain the same score in an IQ test than twins from two separate eggs that have a different genetic make up. Genes work by interacting with the environment, so social factors also influence intelligence.

Better schooling, parenting and increased leisure time for activities are believed to have influenced improved IQ scores in many students. Good nutrition means an individual is able to function well both physically and mentally. Although many believe this plays a role in intelligence, it is very difficult to assess. A balanced diet will provide all the foods required to maintain the correct balance of neurotransmitters.

### *Creativity defined*

Having understood the basic characteristics and features of intelligence, you must be wondering about persons you have known who are very bright, very different and somewhat unconventional in the ways in which they think or do things. Sometimes, they may even seem 'odd' to you. Have you ever tried to find suitable adjectives to describe them? While they may not fit into the traditional definition of being intelligent, the label of "creative persons" may have appealed to you. Let us try to see who these creative persons are and what creativity represents.

When talking about creativity, the key words which come to your mind could be genius, talent, intelligence, ability, skills, originality, and individuality.

The noun, 'create', in English, means to originate, to bring into being, to give birth, to and to produce. In its essence, the process of creativity and creation is a process of change with a certain dynamic of a beginning and an end. There are many, sometimes contradictory views about the nature of creativity. Still, most of the psychologists agree that:

Creativity is the ability to produce work that is novel, high on quality and appropriate. A product is novel when it is original and not expected. A product is appropriate when it fulfills a certain set of constraints or what constitutes a useable solution to a task. The creative process involves the application of past experiences or ideas in novel ways

### *Characteristics of creative persons*

Creativity, according to psychologists, is characterized among other attributes, by divergent thinking. It includes:

**Fluency** or the retrieval of information from memory.

**Flexibility** or the ability to transform, reinterpret, redefine information and adapt it to new uses.

**Elaboration** or producing a series of logical ideas

**Originality** or providing new, unusual, rare ideas/ perspectives

Researchers over a number of years have provided us with a checklist of the characteristics of creative persons. Let us take a look at them through the following self-assessment.

### Self-assessment

7. Read the statements given below and tick the ones which you feel are characteristic of creative persons.

- A creative person is able to create something new and useful.
- A creative person is able to give observable new, and original shape to objects on the basis of previous knowledge or expression of ideas, thoughts, etc.
- A creative person is able to apply new learning in practical life.
- A creative person has the capacity to make varied use of things.
- A creative person engages in divergent thinking.
- A creative person is open to experiences.
- A creative person has a high persistence level.
- A creative person has high levels of energy.
- A creative person exhibits great intellectual curiosity.
- A creative person is discerning and observant.
- A creative person is alert and can concentrate and drift attention appropriately.
- A creative person has a wide range of information which he/she is able to combine, sort and extrapolate to solve problems.
- A creative person exhibits empathy for people and divergent ideas.
- A creative person is not particularly anxious about what others think about him/her and is free from conventional inhibitions.
- A creative person is flexible with respect to means and goals.
- A creative person does well when independence in thought and action is called for but does not respond well to situations which call for conforming behaviours.
- A creative person is less interested in facts as such and is more concerned with meanings and implications of facts.
- A creative person is intellectually verbal and communicative.

### Answer

All the above statements in the checklist are characteristics of a creative person.

From this checklist given above, I am sure you can identify some of the creative persons who you have been encountering time and again in your lives.

### Myths related to creativity

Let us try to explore the concept of creativity further, especially some of the popularly held beliefs about it. Examine the statements given below and put a tick mark against those which in your view represent creativity.

- Creativity is a hit and miss process

- Creativity produces crazy ideas
- Creativity is a semi mystical process
- In hindsight all our solutions and ideas are logical.
- Creativity is difficult
- You need to be intelligent to be creative

**Answer :** None

The statements given above are MYTHS RELATED TO CREATIVITY. None of them are correct. You should be able to say why. If you are able to do this, you can be sure that your understanding of creativity is good.

## *Theories of creativity*

Now that you know what creativity is, you must be wondering why some persons are creative while others are not. Also, maybe how creativity manifests itself, what causes its representation in some persons etc. may be issues which keep coming to your mind. Some answers to your queries may be obtained while studying the theories of creativity. Any human endeavor can involve creativity and is not limited to just the arts. Numerous theories of creativity have been proposed by twentieth-century psychologists, educators and other social scientists. Let us try to understand what they say.

### *The mystical approach*

Creativity was not always viewed as the prerogative of man. In this approach, the discussion on creativity is always closely connected to the theological one. God is seen as the source of and inspiration for creativity. It is often argued that a poet creates only as his muse. The writer Rudyard Kipling referred to a "Demon" as guiding his pen. To this day, many people believe their creative ideas are somehow divinely inspired, under the control of forces that are supernatural, or at least not understandable through scientific means. Creativity thus comes across as a divine or supernatural power.

Philosophy sees creativity as a process of change. Philosopher **Friedrich Nietzsche** saw power over oneself and others as the source of creativity. Romanticism, a movement in literature and in art, looked at creativity as the freely expressed feelings of the human spirit. **Nikolay Berdyayev** (1874-1948), Russian philosopher, known for his Christian existentialist or personalist views, viewed humans as spiritual beings, and valued freedom and capacity for creativity as gifts of enormous importance. **Carl Jung** (1875-1961), Swiss psychiatrist, who founded the analytical school of psychology, interpreted creativity, and mental and emotional disturbances as an attempt to find personal and spiritual wholeness.

### *The psychometric approach*

The central emphasis in this approach is on measuring creative abilities in much the same way as other abilities, such as intelligence, are measured

J.P. Guilford(1950) first distinguished the thought processes of creative people from those of other people in terms of convergent and divergent thinking. Convergent thinking-the type required for traditional IQ tests-involves the application of logic and knowledge to narrow the number of possible solutions to a problem until one's thoughts "converge" on the most appropriate choice. **Divergent thinking** is closely associated with creativity and originality and involves the ability to envision multiple ways to solve a problem. Guilford identified three aspects of divergent thinking: **fluency** which entails

the ability to come up with many different solutions to a problem in a short amount of time; **flexibility** or the capacity to consider many alternatives at the same time; and **originality** which refers to the difference between a person's ideas and those of most other people.

Howard Gruber, who worked to understand creativity by studying the lives of famous innovators, found broad common characteristics across them:

- They engaged in a variety of activities within their chosen fields.
- They held a strong sense of purpose about their work.
- They had a profound emotional attachment to their work.
- They tended to conceptualize problems in terms of all encompassing images.

These became the guiding characteristics for identification of creative persons.

Graham Wallas's (1962) study of well-known scientists and other innovators yielded a widely used four-stage breakdown of the creative process. The **preparation stage** which, consists of formulating a problem, studying previous work on it, and thinking intensely about it. The **incubation stage**, in which there is no visible progress on the problem; it may be periodically "mulled over," but it is largely left dormant, allowing subconscious ideas about it to emerge. Next is the **illumination stage**, in which an important insight about the problem is reached, often in a sudden, intuitive fashion. In the final stage, or **verification stage** the idea is tested and evaluated.

### *Social psychological approach*

The social psychological approach to creativity focuses on the environmental variables that influence creative thinking.

Teresa Amabile (1983) has emphasized on the following variables mediating creativity:

- intrinsic motivation;
- domain-specific knowledge;
- willingness to break one's mental set;
- heuristics for generating novel ideas (e.g., trying counterintuitive approaches);
- perseverance;
- ability to set aside problems;
- high energy.

Dean Simonton (1999) has analyzed the role of society in the development of creative thought. He advocates that the oddness of an eminent creative person emerging in a generation increases with the number of creatively eminent figures in the preceding two generations. He also says that people who are thoroughly exposed to two or more cultures have a creative advantage over those who are exposed to just a single culture.

Mihalyi Csikszentmihalyi (1999) too has argued for the importance of social context. According to him creativity is the main focus of human life. It is a central source of meaning in our lives. Without creativity, our lives tend to become pointless and meaningless. Creativity is a process by which a symbolic domain in the culture is changed. He emphasized the significance of the social organization of knowledge (the field) in fostering or inhibiting creativity as people pursue a given endeavour.

### *Confluence approach*

The confluence approach to creativity seeks to integrate the characteristics of creative persons with an investment perspective.

Sternberg & Lubart, (1991) have in their investment theory of creativity, described creative people as good investors in the realm of ideas. According to them, creative

people "buy low and sell high". That is, they pursue ideas that are out of favour but have growth potential (buying low). Working within that domain, they move on to new problems, then the idea becomes valued (selling high). The extent to which a person does this depends on the interaction of all the components. It is not simply adding up values (e.g., knowledge base is necessary.)

According to this theory creative people:

- do not accept traditional way of seeing problems, they try to see problems in a new way;
- know something about the field in which they wish to contribute but do not allow their knowledge to interfere with their seeing things in a new way;
- like being creative;
- persevere in the face of obstacles;
- are open to new experiences;
- are willing to take sensible risks;
- are intrinsically motivated;
- find environments that support and reward their creative work.

### Self-assessment

*Read the questions given below and give suitable answers.*

8. *Gayatri writes beautiful poems. Everyone keeps praising her but she simply says "I don't know who wrote it; I think God gives me the inspiration and sits on my pen and writes it. Which approach does she follow?*
9. *Ask your students to explore how authors develop characters with different personalities and different motives from books which they have read. Explain what students are learning about creative thinking in this activity.*
10. *How can the college environment facilitate or impede creative work on the part of the teachers or students?*

## Obstacles to creativity

It is important to identify obstacles to creativity since they may impede a major contribution or idea which an individual can make or have. Sometimes, the obstacles to creativity are direct in that the impediments are visible. Very often however the obstacles are psychological and operate subliminally and unconsciously. Since there can be no universal pattern in the nature of obstacles, let us begin with a small reflective and listing exercise to know what obstacles operate in each of our own individual contexts.

### Self-assessment

11. *Reflect and identify at least 10 things that **negatively** affect your creativity and that of others.*

*Given below is a checklist of obstacles to creativity. See how you can use it to judge your students.*

- |                      |                             |
|----------------------|-----------------------------|
| ● Habit and routines | Certainty                   |
| ● Boredom            | Self-doubt                  |
| ● Stress             | Rational thought            |
| ● Politeness         | Fear of appearing childish  |
| ● Specialization     | Unwillingness to play games |
| ● Language           | Age                         |

- |                                    |                      |
|------------------------------------|----------------------|
| • Lack of time                     | Ego                  |
| • Fear of making mistakes          | Beliefs              |
| • Upbringing                       | Fear of consequences |
| • The weight of previous solutions | Absolute Truths      |
| • Principles                       | Fear of change       |
| • Comfort with patterns            | Self-criticism       |

You will realize, after going through this list, that many behaviour patterns of your students which you could not earlier comprehend now fall into place and you are able to identify with the obstacles to creative thinking which operate in your students' context.

### ***Creativity: nature versus nurture***

You must have always wanted to know where a person's creativity comes from. Is it from his/her genes or from his/her environment related experiences, or both. Let us see what researchers have to say in this regard.

Creativity does not appear to be inherited. Studies with identical twins raised separately show that environmental influences play at least as great a role in the development of creativity as intelligence. Creative skills of identical twins reared apart vary more than their intellectual abilities. Studies have shown that reinforcing novel ideas in both children and adults leads to increased creativity. The originality of block arrangements produced by four-year-olds increased dramatically when novel designs were praised by adults. When this positive reinforcement was stopped, the children reverted to producing unimaginative patterns. Other studies have used similar techniques to boost the creativity scores of fifth graders, improve the originality of stories written by sixth graders, and increased the ability of college students to produce novel word associations. One interesting finding in studies such as these is that positively reinforcing one kind of creative activity encourages original thinking in other areas as well. The play of children is closely related to the development of creativity. The sensory stimulation that results from exposure to new objects and activities reinforces the exploratory impulse in both children and adults and results in an openness to new experiences and ideas that fosters creative thinking. It is hoped that you will now appreciate the playfulness, naturalness and spontaneity of some of your students.

Research shows that creative ability is very high during early childhood but drops markedly during school-age days up to adulthood. Society fosters an environment intolerant to failure and to problem-solving schemes that deviate from the conventional Source : Management Review, 1998

### ***Sources of creativity***

The sources of creativity refer to its different components. You are already aware that creativity is basically an ability or disposition. It may thus take on a manifest form through various sources and ways. Let us try to understand each one of them

#### ***Intellectual abilities***

These may take any of the following forms:

- Problem finding or the ability to detect gaps in knowledge and realize the need for new products. It is often manifested through question-asking.
- Ability to define and redefine the problem.

- Divergent thinking or the ability to generate many different solutions to a problem. Creative people generate many unique and original uses of routine stimuli.
- Strategy selection or the ability to apply heuristic strategies to focus on likely solutions and knowing when to use divergent or convergent thinking.
- Evaluation ability reflected in being able to select among competing ideas, which should be pursued.
- Insight or the ability to restructure the problem or elements that contribute to its solution, noticing relevant new information, find connections between disparate ideas, combining information in problem-relevant ways or , joining together remotely associated concepts.
- General intelligence: Creative individuals tend to have above-average IQ. However, creativity and IQ are weakly correlated, as per research findings.

**Knowledge** of formal (e.g., facts) or informal (e.g., heuristics) type. This helps to recognize and understand problems, prevents an individual from rediscovering old ideas, helps him/her to move away from current thinking and helps him/her to notice new ideas.

**Cognitive styles:** According to the preferred ways of applying intellectual abilities and knowledge to a problem we can categorise people as adaptors or innovators.

- Adaptors seek solutions that involve small adjustments and maintain the initial structure or paradigm.
- Innovators restructure the problem and approach it from a new angle.

**Personality factors** which are characterized by tolerance of ambiguity, perseverance, openness to new experiences, willingness to try out new ideas, willingness to take risks, and courage of convictions

**Motivation** which could be intrinsic or extrinsic, task-focusing or goal-focusing. For creativity task-focusing is better.

### Self-assessment

12. Read the first person narrative of a math's lecturer given below and answer the following questions following it.

..... "The fact is that I am now looking for a change .....in my job things are not going great between the Head and me .I am unable to bring out my potential / ideas because of her immature behaviour . I have so many ideas and concepts which can benefit the institution. But whenever I have voiced them, the entire issue gets shunned down by her..... a lot of frustration has crept into me." Other lecturers and students too have said words like this

- i) Identify the problem
- ii) Identify the ways in which institutions can foster creativity better and preserve the work morale of their faculty.

## Strategies to foster creativity

It is important for you to understand, that creativity can actually be fostered among students and teachers, both of which will enhance the health and quality of the institution. It is thus highly desirable that an effort be made in this direction. Let us now situate this realization in the operational realities of what an institution can do. An institution that encourages creativity is characterized by several traits. These include:

- Good teacher -student relationships: One's that nurture an atmosphere of mutual respect for each others' ideas.

- Open communication that will enable free flow of information throughout the organization.
- Active support and co-operation from teachers.
- Attention to highly creative personnel. (The person who has exhibited creative behaviors may be assigned work that enables them to have respite from daily homework.)
- Time to think - a period is allocated which allows students to think and engage in creative work.
- Avoidance of premature criticism.
- Teachers tolerate and expect a certain degree of reasonable risk-taking.

Each of these traits can be adopted and pursued by institutions if creativity is to be facilitated and fostered.

### **Self-assessment**

13. *Apply what you have just read to the following problem.*

*A little girl had just finished her first week of school. "I'm just wasting my time," she said to her mother. "I can't read, I can't write and they won't let me talk!"*

- *Identify her problem*
- *Suggest the ways in which her teachers can foster creativity.*

### ***Suggestions for enhancement of creativity***

- Encourage divergent ways of performing tasks by providing resources and space.
- Value individual differences, styles, and points of view by varying activities or other means for being different.
- Re-inforce unusual ideas and responses.
- Encourage choices and involve students in goal setting to build a feeling of individual control.
- Support the learning and application of specific creative problem-solving tools and skills in the workplace.
- Provide a realistic time-frame for work.
- Communicate confidence in the students, reducing concern of failure by using mistakes as positives.
- Challenge students to solve problems in new ways; ask provocative questions.
- Encourage self-initiated projects by respecting an individual's need to work alone or in groups.
- Tolerate complexity and disorder.
- Create a climate of mutual respect and acceptance among students.
- Encourage a spirit of co-operation, open confrontation and resolution of conflicts and the expression of ideas.

The use of some of these strategies as regular practice will help to generate a whole ethos of creativity.

## Summary

Defining intelligence is highly problematic. Is there an 'intelligence' that equips us to solve all kinds of problems and answer all questions, regardless of their nature? Or are there different intelligences that help us deal with particular problems and solutions? The scientific community is divided on this issue and the answers could be addressed either way.

The purists — ranging from the turn-of-the-century English psychologist Charles Spearman to his latter-day disciples defend the notion of a single overarching "g," or general intelligence. The pluralists — ranging from L. L. Thurstone, of the University of Chicago, who posited seven vectors of the mind, to J. P. Guilford, of the University of Southern California, who discerned 150 factors of the intellect — construe intelligence as composed of some or even many dissociable components. More contemporary approaches look at multiple intelligence, emotional intelligence and spiritual intelligence.

Creativity can be understood as a thinking process that enables a person to produce, usually as a result of proper stimulation from the environment, something novel and useful either for the individual or for the society. It is a multidimensional, multi-factored thinking-emotive phenomenon with areas open for its expression. It has been described through tests using fluency, flexibility, originality and elaboration. It is the highest mental process which involves reasoning, hypotheses making, drawing inferences, ability to analyze, synthesize and judge. Studies with identical twins raised separately show that environmental influences play at least as great a role in the development of creativity as intelligence. Creativity helps in meeting stressful situations and helps fostering mental health of an individual. Hence it must be developed among students and teachers.

## Unit-end exercises

1. What are the differences between intelligence and creativity?
2. Shalini aged 22 years old, invented a car which could run on solar energy. This was her answer to the growing problem of scarcity of natural resources and pollution. She was very happy and excited with her invention and wanted to show it to her favorite lecturer. On seeing the model the lecturer said to her, "A good idea, but I don't think you should go ahead with it. You will face a lot of problems as you are a girl .....Be practical, that's too futuristic.....People won't like it .....it will cost too much . Anyway it is not our problem

You are the teacher and have to:

- Identify the needs of the student;
- Identify the ways in which the teacher killed the student's creativity;
- Identify the needs of the teacher;
- Suggest strategies to encourage the student to think creatively.

## Suggested readings

Gardner, H. (1983), *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.

Gardner, H. (1993), *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.

Feldman R. S. (1996), *Understanding Psychology*, 4<sup>th</sup> Edition. New York: McGraw Hill.

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Sternberg R. J. (2002), *Educational Psychology*. Boston: Allyn & Bacon.

Sternberg, R. J. (1996), *Successful Intelligence: How Practical and Creative Intelligence Determine Success in Life*. New York: Simon & Schuster.