BLOCK 4

MOTIVATION AND CREATIVITY

UNIT 9   MOTIVATION*

Structure

9.1   OBJECTIVES

After reading the Unit, you will be able to :

● define motivation;

● describe the types of motivation;

● discuss the theories of motivation;

● discuss the ways of enhancing individual potential through intrinsic and extrinsic motivation; and

● elucidate the concepts of self-regulation and self enhancement.

9.2   INTRODUCTION

Mahima was taking part in 100 meters marathon in her college. But as she started running there was a cramp in her left leg. But despite of the pain and discomfort, she managed to finish the race and secure the first prize. What do you think might have made Mahima continue in the race and perform to her best?

Sania's brother was getting married the next day and despite of being preoccupied with the marriage preparations, she ensured that the report that she had to submit to her Manager was prepared and submitted as per the time given to her, What do you think prompted Sania to prepare the report and submit it in time?

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In the above examples, the main question that arises is why did the individuals (Mahima and Sania) behave the way they did. What was the driving force behind their behaviour?

In our day-to-day life, you might have come across such behaviours, where you may have wondered why certain individuals behaved the way they did. From getting something to eat to helping a person injured in an accident, to completing work in time, one of the significant factors that can play a role is motivation. As certain behaviours may be displayed due to the factor of motivation, it is also possible that an individual may not behave in certain ways because of lack of motivation. For example, a student may not do well in his/ her examination because he/ she never felt motivated enough, intrinsically or extrinsically (these terms will be discussed in detail later in this Unit) or an individual may not perform to his/ her best at work place due to lack of motivation.

Thus motivation answers the 'why' of human behaviour. It is a key factor that determines human behaviour and thus it is important that as students of psychology, you understand this term in a better way. In the present Unit we will define motivation and describe the types of motivation. Further, we will discuss the various theories of motivation explaining the nature of motivation. You will also learn about the concepts of self regulation and self enhancement, and different ways of enhancing individual potential through intrinsic and extrinsic motivation.

9.3   DEFINING MOTIVATION

Motivation has been mainly termed as a factor that drives or pushes one in a certain direction or to behave in a certain way. Motivation can be termed as a driving force or it can also be stated as a process that starts and drives various activities, whether physical or psychological (Gerrig and Zimbardo, 2006). The term motivation has been derived from a Latin word '*movere*', which means 'to move'. It can thus be described in terms of drive, force, desires, needs and wishes that may lead to individuals behaving in a certain manner. A desire to get praise from the teacher may motivate a student to perform well in a class activity. A wish to gain more knowledge about a certain subject may motivate an individual to take up an educational programme in that subject. A hunger drive may prompt an individual to buy biscuits or snacks. A desire to spend time with his/ her parents, may encourage a person to travel long distance. Thus any human behaviour can be said to be as a result of some kind of motivation.

The term motivation has been defined in various ways as you can see below:

Feldman (2015, p. 287) defined motivation as "*the factors that direct and energize the behaviour of humans and other organisms*".

Feist and Rosenberg (2015, p. 397) define motivation as "*the urge to move towards one's goals, to accomplish tasks*".

Chamorro- Premuzic (2015, p. 272) defined motivation as "*an internal state, dynamic rather than static in nature, that propels action, directs behaviour and is oriented toward satisfying both instincts and cultural needs and goals*".

Quick, Nelson and Khandelwal (2013, p. 172) defined motivation as "*the process of arousing and sustaining goal directed behaviour*".

Nolen-Hoeksema et al (2009, p. 419) describe motivation as "*a condition that energizes behaviour and gives it direction*".

Morgan et al (1993, p. 268) define motivation as "*the driving and pulling forces which result in persistent behaviour directed toward particular goals*".

Petri (1996) defines motivation as *"the process by which activities are started, directed and continued so that physical or psychological needs or wants are met"*.

Analyzing the above definitions, we can say that motivation is an internal force that drives people into some action or behaviour. It is a process having a goal-directed orientation. It is dynamic in nature which energizes the person to pursue a goal.

In the context of motivation the three main terms that need to be discussed are needs, drives and incentives that contribute to motivation.

Needs: These are related to the biological states of cellular or bodily deficiencies that lead to drives. For example, individuals need water, food and of course oxygen to survive (Feist & Rosenberg, 2015).These are the biological needs, the needs related to the body. We also have cognitive needs and social needs. Cognitive needs include such needs as need for achievement and curiosity. Social needs arise from social situation/ context and include need to conform, cooperate and compete.

Drives: Feist & Rosenberg (2015, p. 397) define drives as "the perceived states of tension that occur when our bodies are deficient in some need, creating an urge to relieve the tension". As we discussed under need, a need leads to or compels drive. Thus when an individual is hungry he/ she will seek food. Thus the need leads to drive and makes the individual to behave in such a way that the deficiency created is dealt with.

Incentives: This is external or is from the environment (as opposed to drive that are internal) and plays a role in motivating behaviours. It could be an object or an event. A trophy won in a game can be termed as an incentive to do well in that game.

After knowing the meaning of motivation, now let us see the types of motivation. Human behaviour is caused by various motives some of which may be basic such as food, and some may be influenced by social factors. Further, some may arise from within the individual, the internal psychological factors. Let us discuss these various types of motives in the section below.

9.4 TYPES OF MOTIVATION

Motivation can be broadly of two types, which are discussed as follows:

1) **Primary and Secondary Motivation:** *Primary motivation* can also be termed as basic motivation and mainly includes the needs related to hunger, thirst, sleep, sex, avoidance of pain and so on. These mainly influence an individual's behaviour at a basic level and these needs are also related to the basic need for preservation of self. *Secondary motivation* can be termed as learned motivation and these may differ from individual to individual. They are also related to the priorities and values of the individual. You will learn more about this under drive reduction theory in section 9.5.

2) **Extrinsic and Intrinsic Motivation:** This is yet another way in which motivation can be categorized. *Extrinsic motivation* can be defined as "motivation that comes from outside the person and usually involves rewards and praises" (Feist & Rosenberg, 2015, p. 415). The examples of extrinsic motivation are reward, praise, money, feedback and so on. Thus it consists of something outside the individual. Such motivators provide satisfaction/ pleasure that the activities/ tasks may not provide. Thus these motivators get the individual to do something that they may not do otherwise.

Extrinsic motivation has a number of advantages as it is not only linked with the increase in behaviour but also with increase in performance. However, it also has limitation in the sense that, if, for instance, the reward is removed, then the behaviour may also decrease. And at the same time if the reward remains the same and is not increased, the motivation will also decrease. Further, extrinsic motivation may be effective with simpler tasks as opposed to tasks that require creative and lateral thinking. Moreover, it may also affect the intrinsic motivation of the person in carrying out the task. For example, if a child enjoys keeping his/ her room organized and tidy, but if parents start providing reward for the same, the child will keep the room tidy not because of the intrinsic motivation, that is the enjoyment, but will do so because of the reward given by the parents. To take yet another example, if an employee adequately uses safety devices because he/ she is intrinsically motivated to do so and if his/ her supervisor provides him/ her with extrinsic motivators for use of the safety devices, the employee will start using the safety devices due to the extrinsic motivation and not due to the intrinsic motivation.

Intrinsic motivation can be defined as "motivation that comes from within a person and includes the elements of challenge, enjoyment, mastery and autonomy" (Feist & Rosenberg, 2015, p. 416). For example, there could be an activity that an individual enjoys doing. There are four components of intrinsic motivation (Feist and Rosenberg, 2015) as given below.

- *Challenge:* It relates to the extent to which an individual enjoys the excitement that accompanies a new challenge.

- *Enjoyment:* It relates to the pleasure that an individual may obtain from carrying out the task.

- *Mastery:* It relates to the sense of pride and accomplishment that an individual may experience when he/ she carries out a difficult task.

- *Autonomy and self determination:* It relates to the autonomy that an individual enjoys while carrying out the task, that is, the freedom with which the individual can determine what is to be done and how is it to be done.

Intrinsic motivation plays an important role in enhancing the productivity as well as creativity in the individuals.

Self Assessment Questions I

1) Define motivation.

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2) What is intrinsic motivation?

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9.5   THEORIES OF MOTIVATION

Let us now discuss the various theories of motivation which help to explain how does motivation function and operate to influence our behaviour and actions.

1)   **Drive Reduction Theory:** The drive theory focuses on needs and drives which we have discussed earlier. It is also called as the push theory of motivation as "the behaviour is pushed towards goals by driving force within the person or animal" (Morgan et al , 1996, p. 269).

Drive reduction theory states that "lack of some basic biological need produces a drive to push an organism to satisfy that need" (Feldman, 2015 p. 288). You learned about drive earlier in this Unit which can be explained as a tension or arousal that channelizes behaviour to fulfill a need. Drives can be of two types, primary and secondary. The examples of primary drives are thirst, hunger, sleep and sex that are mainly related to the physiological needs of an individual. Secondary drives are acquired drives arising from previous experience and learning, e.g., need for achievement in one's field of work. Thus, this secondary drive will then channelize the work related behaviour of the person.

An important concept in the Drive theory is homeostasis, which can be explained as "the process by which all organisms work to maintain physiological equilibrium or balance around an optimal set point" (Feist & Rosenberg, 2015, p. 398). It can also be explained as the tendency of the body to maintain an internal state that is balanced or steady (Feldman, 2015). Thus whenever there is any deviation from the ideal state or the set point, then the adjustments will be made by the body to reestablish the balanced state or achieve the set point, thus restoring the balance. For example, when you are thirsty, there is lack of homeostasis and your primary drive is thirst. So, you want to restore the balance and take the action to go and drink water.

Drive reduction theory adequately explains how behaviours are channelised by primary drives; however, it does not adequately explain all human motivations, e.g., arousal-seeking behaviour. It may not help in explaining behaviour of an adolescent who enjoys a roller coaster ride or rides his/ her bike in full speed. Thus such behaviour that is thrilling and behaviour related to curiosity cannot be explained with the help of this theory.

2)   **The Optimal Arousal Theory:** You could see above that the drive reduction theory cannot be applied to explain behaviours related to curiosity or thrill-seeking behaviours. In such cases the optimal arousal theory can help us to explain this need for stimulation. The theory states that when the arousal level is optimal, people perform better and function well. This theory is based on the work carried out by Yerkes and Dodson in 1908, referred to as the Yerkes- Dodson law (Feist & Rosenberg, 2015). It explains the relationship between arousal level and task performance (see Fig. 9aF) in the following way: "we function best when we are moderately aroused or energized and both low and high arousal/ energy levels lead to poor performance" (Feist & Rosenberg, 2015, p. 399).
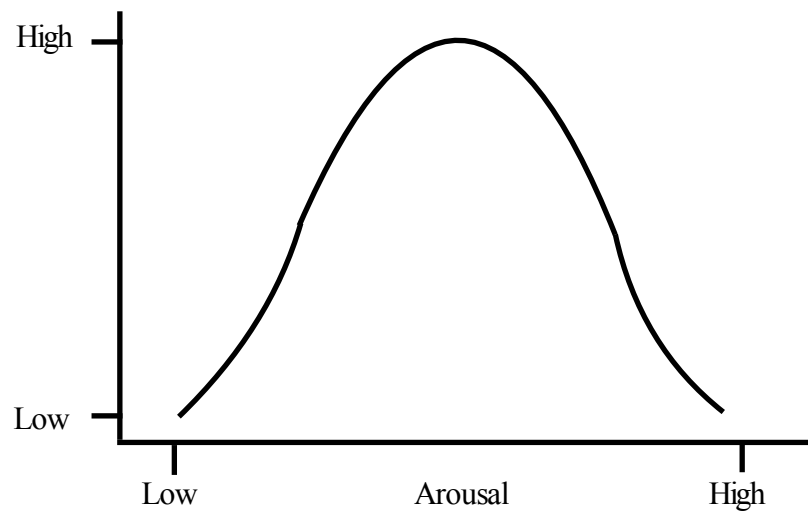
Figure 9aF : The Yerkes- Dodson Law

As you see in the above Figure, when the arousal is low or high, the performance is also low; however, performance is high when there is an optimal level of arousal. Thus it can be said that individuals are motivated when certain situation is not very high or low in stimulation.

There are two things that we need to take note of in the context of the Yerkes-Dodson law.

a)   individual differences in the arousal level

b)   difficulty level of the task

First, when we talk of an optimal arousal level leading to better functioning/ performance, it needs to be noted that this optimal level may vary from person to person. Thus there is no fixed optimal arousal, but it is individual-specific.

The second thing is that the task difficulty level moderates the relationship between arousal and task performance. As the Yerkes-Dodson law states, in case of simpler tasks, a relatively higher arousal level is required for better performance; and with difficult tasks, a relatively lower arousal is needed for better performance.

3)   **Incentive Theories:** These can also be described as 'pull' theories (Morgan et al, 1996). These theories state that the motivation is as a result of desire to achieve external rewards or incentives. For example, a chocolate could serve as an incentive for a child to do his/ her homework in time, even though he/ she may not actually be hungry .Thus incentive theories explain behaviour in terms of external stimuli having rewarding value.

Thus it can be said that both, the drive reduction model and the incentive theories are relevant and can be considered together to explain what motivates certain behaviours. For example, when hungry, an individual will seek food (drive reduction model), however, he/ she will seek food that seems to be more appetizing or appealing.

However, incentive theories cannot explain all human motivation such as when an individual engages in some behaviour even when there is no incentive.

4) **Cognitive Approaches to Motivation:** This approach states that "motivation is a result of people's thoughts, beliefs, expectations and goals' (Feldman, 2015 p. 289). Thus, a student will be motivated to study for examination based on his/ her expectation whether studying will lead to obtaining good marks in examination. This theory also helps differentiate between the intrinsic and extrinsic motivation that were discussed in detail under types of motivation. Individuals are more likely to work on a certain task or towards achieving a certain goal when they are intrinsically motivated as opposed to extrinsically motivated. And it may so happen that attempts to increase extrinsic motivation may lead to decrease in intrinsic motivation (Feldman, 2015).

5) **Maslow's Hierarchy of Needs:** Maslow's hierarchy of needs (Fig. 9bF) presents the needs in a hierarchical order in the form of a pyramid. It proposes basic needs at the lower end moving up to the higher needs. The basic needs are to be fulfilled before the higher order needs are met.
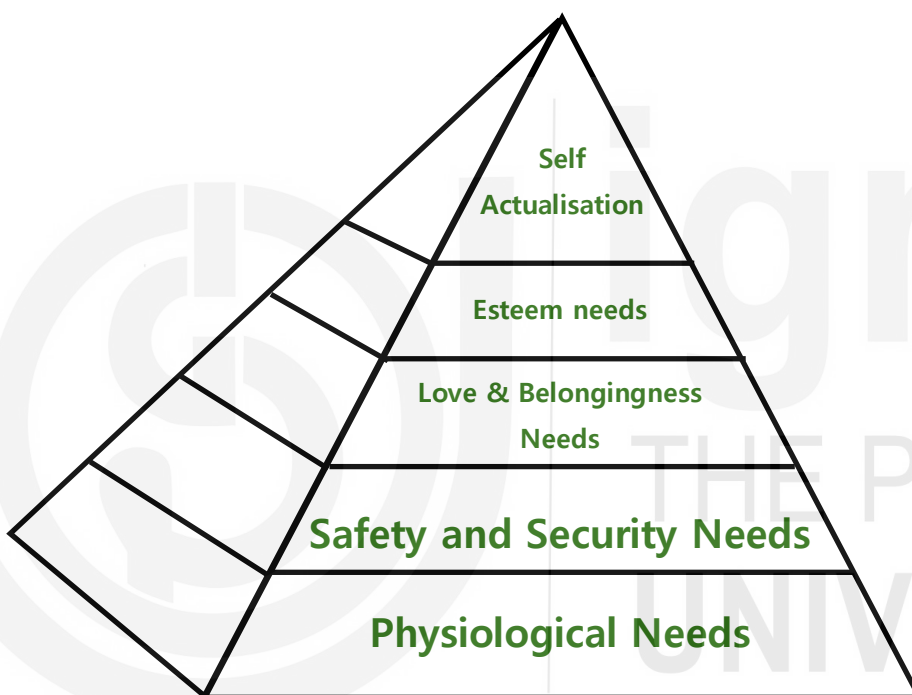
Figure 9bF: Maslow's Hierarchy of Needs (1954)

As we see in the above Figure, the basic needs are the physiological needs (related to the primary drive), namely need for food, water, sleep and sex. This is also called the 'deficiency needs' or D-needs. Physiological needs are followed by the safety needs that are related to the need for an environment that keeps us safe and secure. These two needs can be termed as lower order needs and once these are fulfilled, then the individual will move on to the other higher order needs, also called the 'growth needs'.

The physiological and safety needs are followed by the need for love and belongingness, that is related to the give and take of love and affection. Next comes the esteem needs, that are related to the need for development of a sense of self worth. The highest need is that of self actualization, that is related to the need for realization of one's full potential (Feist & Rosenberg, 2015) or can also be termed as a state of self fulfillment (Feldman, 2015). Maslow, later on, has added a new level of needs higher than self actualization, i.e., transcendence needs, which refers to finding spiritual meaning in life (Maslow, 1996).

Maslow's theory has been criticized on two grounds: (i) these needs are not universal as suggested by Maslow. Cultural variations in the importance of needs may influence this and; (ii)These needs may not occur in the same hierarchical order. We have many instances where great scientists or reformers or artists have engaged in the higher needs of self actualization even if their lower needs of hunger has not been met.

6) **Alderfer's ERG theory:** The Existence, Relatedness and Growth (ERG) theory by Alderfer is similar to the theory proposed by Maslow; however, the theory highlights only three levels in place of five levels. At the lowest level of the hierarchy is the *existence needs* and as the name suggests these are basic needs related to the physiological needs and the safety needs. The next is the *relatedness needs* that are related to social relationships. The last level is that of *growth needs* and these are related to the need to achieve one's potential, develop competence and so on. The growth needs are similar to the self-actualization needs proposed by Maslow.

7) **Herzberg's Two Factor Theory:** This theory mainly focuses on two main factors that is *hygiene factor* and *motivational factor*. It states that satisfaction and dissatisfaction arise from these two factors. Herzberg says that satisfaction and dissatisfaction are not two ends in the same continuum, but they are two separate factors. Thus the opposite of satisfaction is 'no satisfaction' (not 'dissatisfaction') and the opposite of dissatisfaction is 'no dissatisfaction' (not 'satisfaction').

This theory mainly finds its application in work set up in the context of job performance and job satisfaction. The hygiene factors are the basic factors such as good working condition, cooperative colleagues, optimum workload etc. that need to be present in the work set up so that there is less dissatisfaction. However, going beyond the hygiene factors or no dissatisfaction, there need to be motivators so that the person derives satisfaction from his/her job. In other words, hygiene factors ensure that the person is not dissatisfied. And the motivational factors ensure that the person is satisfied in his job.

The hygiene factors and motivational factors are given in the Table 9aT below.

Table 9aT: Hygiene and Motivational factors	
Hygiene factors	**Motivational factors**
– Adequate working conditions – Proper workload – Good salary – Good relationship with supervisor, peers and subordinates – Security	– High salary and bonuses – Achievement/ promotion – Recognition – Responsibility – Advancement and growth

The hygiene factors determine the level of dissatisfaction and if these needs are taken care of then the dissatisfaction will be low in the individual. However, this will not contribute to satisfaction in the individual and the motivational factors are required to ensure that the individual experiences satisfaction. However, there may not be always such a scenario. In the absence of hygiene factors, e.g., poor job conditions of a soldier, still he is motivated to serve for the country. Also, good hygiene factors may not motivate

the person to do well. In other words, it is crucial to ensure both good working conditions as well as motivating factors to ensure good job performance and satisfaction in the job.

8) **McClelland's Acquired Needs Theory:** This theory was developed by David McClelland and it highlights the three psychological needs: achievement, affiliation and power.

- *Need for Achievement (nAch)* refers to the need to achieve or excel. It is characterized by a strong need to master skills and achieve success. They want to take up challenges, compete, overcome obstacles and difficulties.

- *Need for Affiliation (nAff)* refers to the need to relate with others. They want to form close and intimate relationship with others. Such people are very social and liked by others. They can function very well in a team and collaborative set up.

- *Need for Power (nPow)* relates to the need to have an influence, impact and control others. People having high need for power want status and positions to be called as influential in material terms, e.g., they may wear expensive clothes or jewellery etc.

The above theories thus explain the nature of motivation and help us further understand the concept of motivation.

Self Assessment Questions II

1) Explain the drive reduction theory of motivation.

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2) List the needs as explained by Maslow.

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9.6 ENHANCING INDIVIDUAL POTENTIAL THROUGH INTRINSIC AND EXTRINSIC MOTIVATION

Under types of motivation we discussed about intrinsic and extrinsic motivation. But it is also important to understand how to enhance an individual's potential or how to motivate the individual to do his/ her best with the help of intrinsic and extrinsic motivation. This has relevance not only in our day-to-day life but also for students in schools and employees at workplace etc. Various techniques can be used to motivate individuals intrinsically and extrinsically.

Let us first focus on intrinsic motivation. In order to intrinsically motivate the individual, we will need to focus on its components that we discussed earlier, that is, challenge, enjoyment, mastery and autonomy and self determination. The techniques employed to intrinsically motivate individuals will necessarily depend on these basic components.

Some of the ways in which individuals can be intrinsically motivated are discussed as follows:

Ways to increase the intrinsic motivation:

1) **Creating challenges:** In order to intrinsically motivate individuals, they need to be challenged or need to be involved in challenging activities or are given goals that are challenging. Also while creating these challenges, it can be ensured that the activity or the goal assigned has some personal meaning to the individual. Further, these goals or activities need to be challenging enough to display an uncertainty, where achieving the goal or completing the activity is possible but not absolutely certain. Feedback based on performance may also play an important role here, as feedback will help the individual understand his/ her standing in the face of the challenge. In school set up or at work place, the students and employees can be given challenging tasks in order to elicit their intrinsic motivation.

2) **Providing autonomy:** Autonomy was discussed as one of the components of intrinsic motivation. Individuals need to be provided with autonomy while assigning activities, tasks or goals, so that they are intrinsically motivated to do their best. We all want to feel in control of our own self and our surrounding. In a work set up, when individuals are provided with certain goals, they also need to be given certain autonomy or control over themselves as well as their surrounding in order to intrinsically motivate them to enhance their potential and motivate them to complete the activity. Such an autonomy can be created when the individuals perceive a relationship (cause and effect) between the efforts put in by them and the desired results. Further, the effect or the result also needs to be worth the effort. Also the individuals are better intrinsically motivated when they feel that the activity that they are carrying out is not because they are forced to do it but because they want to.

3) **Eliciting curiosity:** Curiosity occurs when something in one's surrounding catches one's attention and the individual wants to know more about it. Curiosity can be of two types, sensory curiosity and cognitive curiosity. Sensory curiosity is elicited when an individual finds something in his/ her surrounding that catches his/ her attention. It could be a sound, or an object and so on. Cognitive curiosity is elicited when an individual feels a need to learn more or gather more knowledge about the activity, object or event. A colourful model or exhibit in a classroom can elicit such curiosity amongst the students and can motivate them intrinsically to learn more about it.

4) **Cooperation:** When an individual is given an opportunity to cooperate with other individual/s there is a possibility that his/ her intrinsic motivation will increase. Cooperation with others leads to feelings of satisfaction in the individual that enhances intrinsic motivation.

5) **Competition:** Similar to cooperation, even competition with other individual/s can lead to increase in intrinsic motivation. Competition provides an opportunity to the individual to compare one's own performance with other individuals and that can in turn lead to increase in intrinsic competition.

6) **Working towards a greater good or higher purpose:** When an individual feels that he/ she is working for a greater good or higher purpose, then this will also serve as an intrinsic motivator and will enhance the individuals potential to perform.

With regard to extrinsic motivation, the reinforcements need to be linked to the activity or performance. Extrinsic motivators can help generate interest in an activity and also help individuals that lack basic skills for carrying out certain activity.

Some of the ways in which individuals can be extrinsically motivated are discussed as follows:

Ways to increase the extrinsic motivation:

1) **Recognition:** Recognition is one of the important factors that can lead to increase in extrinsic motivation in an individual. For example, an employee can be motivated to perform better when he/ she is extrinsically motivated with the help of recognition. Recognition may also lead to increase in satisfaction that the individual will derive by carrying out his/her work related activities. Though one needs to ensure that the recognition is genuine as well as sincere for it to be effective.

2) **Rewards and incentives:** This is another factor that can lead to increase in motivation. Rewards and incentives can be financial reward or non-financial reward. An example of financial rewards would be an amount that is given to the employee for following safety norms in an industry. Whereas, a non-financial reward could be praise or even attention.

3) **Punishment:** Similar to rewards, punishment can also lead to an individual being motivated. Fear of being penalized may lead to following of safety behaviour by the individual. A student will prepare his/ her homework in time in order to avoid any punishment from his/ her teacher.

4) **External pressure:** Pressure from significant others in one's lives like parents, superiors and so on can also serve as an extrinsic motivator.

In this context, over-justification effect can also be discussed, where extrinsic motivation leads to interference with intrinsic motivation, that is, intrinsic motivation may decrease due to excessive extrinsic motivation. This takes place because as individuals analyze what motivates them, they assign more significance to external reinforcements rather than their intrinsic motivation or it can also be because the activity that was otherwise performed by them with interest, now feels like an obligation to achieve external reinforcement.

Self Assessment Questions III

1) List the ways in which individuals can be intrinsically and extrinsically motivated.

Intrinsic Motivation	Extrinsic Motivation

9.7 SELF-REGULATION

Self regulation in simple terms can be described as control that one has over oneself. Self regulation was explained by Bandura, 1991 (as cited in Ackerman, 2018) as "a continuous and active process that involves monitoring one's own behaviour, its influences and consequences, evaluating one's behaviour in comparison with one's own values and standards as well as situational norms and then reacting to one's own behaviour in terms of how one thinks and feels". It can also be described as "capacity to control one's thoughts, feelings and behaviour" (Barrett, 2017, page 141).

Self regulation can be emotional or behavioural. Emotional self regulation denotes regulation of one's emotions, whereas behavioural self regulation denotes behaviour that will benefit the individual in long term and is consistent with one's values (Stonsny, 2011 as cited in Ackerman, 2018).

Self regulation is an important aspect in human beings that enables them to sustain in the complex environment that they live in. It not only helps individuals to be flexible and adjust to varied situations and their demands but it also helps them deal with the selfish impulses with the help of their social conscience (Baumeister & Bushman, 2008).

Self regulation develops during childhood and it is an important skill for children to develop emotional maturity as well as to maintain social relationship. As such self regulation can be described as the factor coming in between feeling and action, where an individual takes time to think about the situation that he/ she is facing and then accordingly takes an action. For instance, an individual may face a situation where she may feel uncomfortable, but she may regulate her actions to deal effectively with the situation and the uncomfortable feeling. Thus self regulation can act as one of the ways to increase one's motivation and enhance one's potential.

Lack of adequate self regulation has been linked to various problems like alcoholism, dependence on drugs, obesity, decreased academic achievement, financial problems, criminal behaviour, eating disorders, lack of control over anger, poor physical health and so on (Baumeister & Bushman, 2008; Barrett, 2017). Individuals who are able to adequately self regulate often do well on the job, have effective relationships and often do well in varied dimensions of their lives (Baumeister & Bushman, 2008).

As stated by Baumeister & Bushman (2008), the following are the components of effective self regulation:

- **Standards:** Standards "denote ideas or concept (including ideals, norms, expectations, moral principles, laws) about how the things could be" (Baumeister & Bushman, 2008, page 127). Any individual grows in the context of these standards and thus one knows what is a good behaviour and what is a bad behaviour and so on. Thus standards play an important role in shaping ones behaviour. Individuals will often compare themselves to these standards and modify their behaviours based on these standards.

- **Monitoring:** This can be termed as evaluation of the behaviour or keeping an eye on the behaviour that one wants to control or regulate. Self awareness also plays an important role over here as one needs to be aware about one's own self and one's behaviour in order to regulate it. In this context the control theory of self regulation can also be discussed which states that self regulation involves four phases, namely, test phase, operate phase, test phase and exit phase (Shetgovekar, 2018). In test phase the individual will compare his/ her own self with either public

or private standard. In operate phase, if the individual feels that his/ her behaviour is not consistent with the standard, the behaviour is modified to meet the standards, in test phase. During the second test phase, there is a retest, i.e.,the individual again compares his/ her behaviour with the standard and lastly in the exit phase, there is an exit from the loop or vicious circle as the individual feels that his/ her behaviour is consistent with the standard.

● **Strength:** Strength also can be explained in terms of willpower. Willpower has been termed as an important factor in effective self regulation. Though there can also be depletion of willpower as it is used, individuals can be trained to strengthen their willpower which in turn can lead to effective self regulation.

Self regulation can be developed and some of the techniques for self regulation are discussed as follows:

1) **Cultivating self awareness and self monitoring:** Cultivating self awareness can also help in developing self regulation as the individuals become more and more aware about their strengths and weaknesses. Along with self awareness, self monitoring also helps in developing self regulation, as has been discussed earlier.

2) **Cognitive reappraisal:** This mainly involves modification of thinking pattern. Thus the thinking is modified in such a way that the person experiences positive emotions. For example, if a student obtains less marks in an examination, rather than thinking that she is not good enough, she can think in terms of putting in more efforts next time. Thus cognitive reappraisal mainly focuses on reframing our negative thoughts and have a positive outlook towards the situation.

3) **Mindfulness:** Mindfulness can be described as an ability to be self aware as well as being present about where one is, what he/ she is doing and not being overly reactive or get engulfed by what is happening around oneself (Mindful Staff, 2014). The breathing exercises in mindfulness help in managing emotions and negative feelings and thus helps in self regulation.

4) **Positive attitude:** Developing a positive attitude towards situations, events, people and objects can also help us in developing better self regulation.

5) **Stress management:** Effective management of stress can also help in self regulation. When an individual is able to manage stress, she will feel in better control of her self, thoughts and feelings. Thus various stress management techniques including relaxation techniques, exercises, cognitive behaviour techniques etc. can be effectively used to manage stress.

6) **Time management:** Besides stress management, time management techniques may also help in self regulation, Techniques like setting priorities, having a planner, having clear goals and so on can help manage time effectively.

Self Assessment Questions IV

1) What is self regulation?

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2) Name the three components of effective self regulation.

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9.8   SELF ENHANCEMENT

Self enhancement can be described as "the tendency to describe and present oneself using positive or socially valued attributes, such as kind, understanding, intelligent and industrious" (Larsen, Buss & Deuskar, 2014, P. 499). In the context of motivation, one can discuss about the self enhancement motive, that can be defined as "the desire to learn favourable or flattering things about the self" (Baumeister & Bushman, 2008, page 87). This motive may lead individuals to turn a blind eye towards criticisms and exaggerate their positive attributes. Self enhancement can also be described as an activity that is cognitive as well as interpersonal in nature with a goal to achieving enhanced image about one's self.

There are several related terms such as self improvement, self assessment, self verification and self protection. Let us differentiate self enhancement from these.

Self improvement can be explained as a motive to make oneself better, whereas self enhancement can be explained as a motive that is focused on perception that one is better, which may or may not be compatible with reality. *Self assessment* can be described as a motive that focuses on securing a precise perspective about oneself that can be positive or negative, whereas self enhancement mainly focuses on having a positive perspective about oneself. Yet another term that can be compared with self enhancement is *self verification*, that is verifying notions that an individual held about himself/ herself previously that can be positive or negative. However, in self enhancemnt the positive notions are confirmed, whereas negative ones are not. It is important for the individual to have a positive feeling about one self and thus an individual may involve in numerous strategies related to evaluation and enhancement of one's self. Self enhancement thus can be related with *self protection motive* where individuals involve in creating a positive self image in order to protect one's self.

Thus an individual will modify his/ her behaviour based on whether it is appreciated or not by people around, especially the significant people in his/ her life. In this context the **theory of Social Comparison Processes** can be discussed. This theory was proposed by Festinger in 1954 and it states that behaviours are evaluated by an individual initially by using objective standards, however when such objective standards are not available then subjective standards are used by him/ her (Barrett 2017). Thus social comparison helps provide feedback with regard to one's beliefs and opinions and accordingly an individual can modify his/ her behaviour in order to be appreciated and liked by significant others in life.

Most often social comparisons are carried out with persons who are similar to our selves like family members or friends; however, such comparisons are avoided if they lead to negative self evaluations. This is also supported by the **Self Evaluation Maintenance model (SEM)** that states generally social comparisons are carried out when there is a likelihood of it leading to positive self evaluations. The main assumption of this model is that individuals are motivated towards maintaining and enhancing positive evaluations about themselves and this is done by them through reflection and social comparison. To give an example, a football player may compare his football playing

skills with the sibling who is also a football player. However, if the sibling is a better football player than him, then he will not involve in any social comparison with the sibling. In such a case in place of social comparison, the individual will involve in reflection, that is the sibling's success is reflected on the individual as he associates with the sibling leading to him experiencing enhanced self esteem.

To discuss further about social comparison, individuals engage in social comparison in order to preserve positive image about themselves and this comparison is necessarily based on whether there will be enhancement of self worth or not. Thus social comparison can be categorized into *upward social comparison and downward social comparison.* In upward social comparison, the individual will compare his own self with an individual who is better than him and in downward social comparison such a comparison is carried out with an individual who is weaker than the individual. Thus in case of upward social comparison a student will compare his performance to that of a student who has secured more marks in an examination. Whereas in case of downward social comparison a person having a two wheeler will compare oneself with a person having no vehicle.

Social comparison is also carried by an individual with her own former selves (Barrett, 2017). Thus the person may see how far she has come. For example, a person may compare herself with how she was struggling to get a job a few years ago with the present self who is successful at her workplace. Further, individuals may also involve in *counterfactual thinking,* that is thinking about what possibly could have taken place. As the name suggests, it is 'counter to the fact', thinking of alternatives that might have happened instead of what actually has happened. For example, a person receiving a consolation prize in a competition will think that he could have received no prize at all. Such persons will be satisfied to receive at least some prize. But on the other hand a person wining second prize in a competition may also involve in counterfactual thinking and may think that he could have won the first prize and thus he will be unsatisfied and disappointed.

There are various techniques that people use to enhance their selves, these are discussed as follows:

1) **Biased Hypothesis testing:** The questions that are asked to individuals about themselves are framed in such a way that they enhance positive self perceptions. For example, a student will frame a question as " Will I get good per centage in examination?" instead of "Will I do badly in examination?"

2) **The breadth of categorization:** Categorizations are differently used by people to describe their success and failures. For example, an employee securing high rating on performance appraisal will term his achievement as a reflection of his/ her hard work and sincerity. Whereas another employee securing a lower rating may term it as due to his/ her falling slightly short of achieving his/ her target.

3) **Self serving bias:** In self serving bias, an individual will attribute his/ her success to internal factors, whereas, failure is attributed to external factors.

4) **Self handicapping:** This is yet another technique used to enhance self. In this, one's own performance is deliberately impaired so as to provide an explanation for failure.

5) **False consensus effect and false uniqueness:** In this the individual believes that his opinion and actions are in sync with those of others. On the other hand, there is also false uniqueness in which individuals hold on to inaccurate beliefs with regard to how their actions and opinions are different (and thus unique) from others.

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Self Assessment Questions V

1) What is self enhancement?

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2) What is upward social comparison?

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9.9 LET US SUM UP

In this Unit, we learned that motivation can be mainly explained in terms of drive or a factor that channelizes behaviour in a particular direction. Various definitions of motivation were discussed in the Unit that mainly describe motivation as force, desires, needs and wishes that may lead to individuals behaving in certain manner. We also discussed related terms such as need (related to the biological states of cellular or bodily deficiencies that lead to drives), drives (a perception of state of tension that occurs when the body feels some kind of deficiency which creates a pressure to relive the tension) and incentives (this is external, from the environment), as opposed to drive that are internal and plays a role in motivating behaviours. The types of motivation were also discussed with a focus on primary and secondary motivation and, extrinsic and intrinsic motivation. Various theories like drive reduction theory, the optimal arousal theory, incentive theories, cognitive approaches to motivation, the hierarchical model, Alderfer's ERG theory, Herzberg's two factor theory, McClelland's acquired needs theory, were discussed.

We further discussed about the concepts of self regulation and self enhancement. Self regulation in simple terms can be described as control that one has over oneself and self enhancement can be described as an activity that is cognitive as well as interpersonal in nature with a goal to achieving enhanced image about one's self. Both these terms were discussed with a focus on their techniques.

9.10 KEY WORDS

Motivation	:	Motivation can be termed as a driving force or it can also be stated as a process that starts and drives various activities, whether physical or psychological
Needs	:	These are related to the biological states of cellular or bodily deficiencies that lead to drives.

Drives	:	The perceived states of tension that occur when our bodies are deficient in some need, creating an urge to relieve the tension.
Incentives	:	This is external or is from the environment (as opposed to drive that are internal) and plays a role in motivating behaviours.
Extrinsic motivation	:	Motivation that comes from outside the person and usually involves rewards and praises can be termed as extrinsic motivation.
Intrinsic motivation	:	Motivation that comes from within a person and includes the elements of challenge, enjoyment, mastery and autonomy is intrinsic motivation
Primary motivation	:	Primary motivation can also be termed as basic motivation and mainly includes the needs related to hunger, thirst, sleep, sex, avoidance of pain and so on.
Secondary motivation	:	Secondary motivation can be termed as learned motivation and these may differ from individual to individual.
Self enhancement	:	Self enhancement can be described as the tendency to describe and present oneself using positive or socially valued attributes, such as kind, understanding, intelligent and industrious
Self regulation	:	Self regulation can be described as a continuous and active process that involves monitoring one's own behaviour, its influences and consequences, evaluating one's behaviour in comparison with one's own values and standards as well as situational norms and then reacting to one's own behaviour in terms of how one thinks and feels.

9.11 ANSWERS TO SELF ASSESSMENT QUESTIONS

Self Assessment Questions I

1) Motivation can be defined in terms of drive, force, desires, needs and wishes that may lead to individuals behaving in certain manner. Feldman defined motivation as *"the factors that direct and energise the behaviour of humans and other organisms"*.

2) Intrinsic motivation can be defined as motivation that comes from within a person and includes the elements of challenge, enjoyment, mastery and autonomy.

Self Assessment Questions II

1) Drive reduction model states that lack of some basic biological need produces a drive to push an organism to satisfy that need

2) The needs as explained by Maslow are:
    - Physiological needs
    - Safety needs
    - Love and belongingness needs
    - Esteem needs
    - Self actualisation

Self Assessment Questions III

1) Intrinsic and extrinsic motivation can be increased in the following ways.

Intrinsic Motivation	Extrinsic Motivation
- Creating challenges - Providing autonomy - Eliciting curiosity - Cooperation - Competition - Working towards a greater good or higher purpose	- Recognition - Rewards and incentives - Punishment - External pressure

Self Assessment Questions IV

1) Self regulation can be described as control that one has over oneself. Self regulation can also be explained as a continuous and active process that involves monitoring one's own behaviour, its influences and consequences, evaluating one's behaviour in comparison with one's own values and standards as well as situational norms and then reacting to one's own behaviour in terms of how one thinks and feels.

2) The three components of effective self regulation are standards, monitoring and strength.

Self Assessment Questions V

1) Self enhancement can be described as the tendency to describe and present oneself using positive or socially valued attributes, such as kind, understanding, intelligent and industrious

2) In upward social comparison, the individual will compare his/ her own self with an individual who is better than him/her and in downward social comparison such a comparison is carried out with an individual is weaker than the individual.

9.12   UNIT END QUESTIONS

1) Define motivation. Discuss the types of motivation.

2) Differentiate between extrinsic and intrinsic motivation.

3) Describe any two theories of motivation.

4) Discuss various ways of enhancing individual potential through intrinsic and extrinsic motivation.

5) Elucidate the concepts of self regulation and self enhancement.

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UNIT 10   CREATIVITY*

Structure

10.1   OBJECTIVES

After reading the Unit, you will be able to :

● define creativity;

● describe the various aspects of creativity;

● elucidate the approaches to creativity;

● explain the relationship between creativity, intelligence and personality;

● know the measurement of creativity; and

● discuss the ways of enhancing creativity.

10.2   INTRODUCTION

Mina studies in class IX. In the science class, her teacher asked the students to do an experiment on water as given in the book. Mina, always curious about things, did the experiment in a different way. The teacher, though said that it is correct, but still gave less marks as it was not as per the syllabus.

The drawing teacher of Arpit, who is in Class VI, asked him to draw a human body. He drew the human body with all internal organs. The teacher told that he needs to draw the external outline of body only.

What do you think about Mina and Arpit in the above examples? Are they creative? What do you think of the response of the teachers? Creativity, like intelligence and personality, is a commonly used term in our day-to-day life. But do we really understand

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what constitutes creativity? Though we have some ideas about it, let us see in this Unit how creativity is defined in a scientific way and how does it correlate with other aspects of our behaviour. We all say, that person is so creative or she/he is not creative at all. What do we mean when we say so? Are we referring to the personality of that individual or her/his intellectual abilities or motivational aspects?

Creativity is important for the progress of any nation and this will depend on the extent of development of creativity among its citizens. A creative individual will not only deal with situations effectively, adapt successfully and function well in different contexts, but also contribute to the society in significant ways. Hence, it is required that we understand the nature of creativity and the various processes involved in it. In this Unit, we will know the meaning and aspects of creativity. Approaches to explain creativity will also be discussed. Further, barriers to creativity will be pointed out and you will learn various ways to encourage creativity among the individuals.

10.3 NATURE AND ASPECTS OF CREATIVITY

Do you see the two dots below?

●   ●

Now, you take a pencil/pen and connect these two dots. How did you join it? Most probably, you would have drawn a straight line between the dots to join it. But, can you think of alternative ways to join the two dots? Try and see.

What is creativity? We all are creative to various extents. We have exhibited creative thinking at some point or other when faced with life's varied situations and challenges. It can be called as a special kind of problem solving. Usually when we are faced with a problem, we have the problem situation (the original state), we have a goal state (the desired outcome), and then we have rules using which we reach the desired state. But creativity goes beyond the conventional ways of thinking and addresses the problem in a novel way. It reflects a uniqueness in the person and in the approaches used by him/her. Thus, in the above task of joining the two dots, one can do so by a straight line, and also by drawing zigzag lines, wavy lines, or even extended lines.

Creativity can be described in reference to people, the inventive acts or products, a new creation like a composition or an art/sculpture, or a scientific theory. In other words, we mainly refer creativity to the person or to some tangible product or new creation of that individual. We also describe the creative persons in terms of various specific characteristics. Thus, creativity can be considered (a) from the point of view of the person who creates, (b) in terms of the mental and emotional processes such as perception, motivation, learning, thinking and communication; and (c) in terms of its products such as inventions, theories, poems, paintings etc.

Creativity has been described and defined in various ways. It is the ability to come up with or generate creative ideas and possibilities. It involves thinking in new and original ways to reach a solution. Creativity thus entails originality, but originality is not always creativity. For instance, in case of people diagnosed with schizophrenia, their thinking is characterized by originality and uniqueness, but can it be called as creative? No, because having unusual and new thoughts does not always make sense or are appropriate and relevant to the society. Hence, novelty/originality must go alongwith relevance or usefulness or practicality.

Newell, Shaw and Simon (1963) have suggested four criteria for creativity. One or more of these criteria must be satisfied for an answer to be considered creative:

●   It has novelty and usefulness, either for the individual or the society

- It demands that we reject ideas we had previously accepted

- It results from intense motivation and persistence.

- It comes from clarifying a problem that was originally vague.

MacKinnon (1963) has emphasized the adaptiveness of creativity as well as its originality. According to him,

"true creativeness fulfills at least three conditions. It involves a response or an idea that is novel or at the very least statistically infrequent. But novelty or originality of thought and action, while a necessary aspect of creativity, is not sufficient...it must to some extent be adaptive to, or of, reality. It must serve to solve a problem, fit a situation, or accomplish some recognizable goal. And, thirdly, true creativeness involves a sustaining of the original insight, an evaluation and elaboration of it, a developing of it to the full."

Other researchers (Runco & Jaeger, 2012) have also supported this when they point out that originality is vital for creativity, but not sufficient. Creativity requires both originality and effectiveness (in the form of usefulness, fit or appropriateness). This 'standard definition' of creativity including originality (alternately known as novelty or uniqueness) and usefulness (also called effectiveness, relevance, value, appropriateness, utility etc.) has been extended by others (Borden, 2004; Simonton, 2012c) from two criteria to three-part definition which includes surprise as the third criteria. The creative idea must be surprising or nonobvious.

However, even with these three criteria, still creativity has been difficult to define precisely and it helps to first define what constitutes noncreative ideas. Nevertheless, we can say that creativity includes the following similar words such as novelty, originality, unique, unusual, useful, relevant, appropriate, fit the context, practicality, and makes sense in the light of the demands of the situation.

Let us now focus on different aspects of creativity so that the concept becomes more clear.

Aspects of Creativity

What does creativity involve? Knowing the aspects of creativity can help to design tests for measuring or assessing creativity in people. According to Guilford (1950), creativity involves *divergent thinking* in contrast to convergent thinking. The latter refers to thinking in conventional set pattern whereas divergent thinking refers to thinking out of the box. Divergent thinking is having divergent ideas and possibilities, e.g., think of how many ways you can use a brick. Our education system usually encourages convergent thinking more than divergent thinking, requiring students to provide "correct" rather than "unique" answers (Chamorro-Premuzic, 2015).The importance of divergent thinking can be exemplified by the 'Nine-dots' problem shown in Figure 10aF below. It requires one to join all the nine dots with the help of 'four' straight lines, the lines going through all the dots, without lifting the pencil from the paper and without retracing.
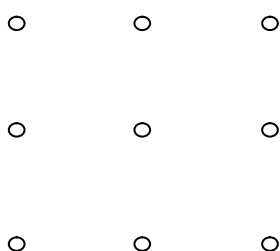
Figure 10aF: The Nine Dots Problem

As you would see, it requires divergent thinking to reach the solution for it. Usually, we do not think beyond the instructions. The instructions have not mentioned that one cannot extend beyond the dots. If one thinks in this line, it can be solved. You can see the solution at the end of the Unit under section 10.10.

Thus, one of the key aspects of creativity is divergent thinking. It consists of four processes/aspects such as,

- *Fluency*: refers to how rapidly the person comes up with ideas. It can be in respect of words, ideas, expression or associations. For example, write words containing a specified letter like p, 'pot', 'hop', 'option' etc. (word fluency); tell the fluids that will burn (ideational fluency); and write words similar in meaning (associational fluency).

- *Flexibility*: refers to the ability to produce a large variety of ideas such as thinking of varied uses of a particular object, e.g., list the different ways of using a rope or a newspaper. It also includes activities to make objects, e.g., drawing specified objects using a set of given figures.

- *Originality*: refers to the uniqueness or novelty of ideas. It is the ability to produce ideas that are unusual, statistically infrequent and not obvious.

- *Elaboration*: involves the ability to develop and describe an idea, such as, consequences of a hypothetical event, e.g., what would happen if no sleep is required?

We all exhibit these aspects of creativity in our day-to-day life in various degrees. There are also people like artists or designers, for example, who engage in creative work as their profession and are publicly acclaimed. This marks a difference between the ordinary every day *little c creativity* and the high creativity or *big C creativity*. The little c creativity is marked by personal effectiveness, thinking in terms of possibilities, facing and coping with daily challenges, a 'can do' attitude, and focusing on getting solutions and overcoming challenges. It highlights the resourcefulness and the agency of the ordinary people; whereas the big C creativity is focused more on the significant contributions of selected people who have excelled in various fields. They have shown remarkable achievements and influenced the society and the field of knowledge in a major way.

10.3.1 Stages of Creativity

Creativity is a complex process. It does not come all of a sudden. It takes time but creative ideas appear all of a sudden, like a flash of lightning. According to Graham Walls (1926), there are four main stages in creativity:

Preparation: The person in this stage tries to understand the problem. As Einstein had said, "the formulation of a problem is often more essential than its solution". Thus, focus needs to be more on knowing about the problem in detail. Mackworth (1965) views that problem finding is more important than problem solving. It is crucial to discover the right problem that needs to be solved. For this, one needs to collect all the information about the problem that will help identify the problem, analyze it and understand it. Further, it involves setting the goal and generating ideas towards the solution of the problem.

Incubation: This is the time out phase where the individual does not engage in any activity. At least there is no overt activity, but the processing of all the information gathered during the preparation stage goes on in this stage. The person does not

consciously or actively think about the problem, but the creative processes carry on within the individual at an unconscious level.

Inspiration: After the incubation stage, the person suddenly gets an insight about the solution of the problem. In other words, it results in an 'Aha' experience. A new idea or new possibilities emerge and the individual is more active and conscious in this stage. She/he may also reformulate the problem based on the illumination or inspiration obtained in this stage. It may be noted that this 'eureka' moment involves a lot of thinking and effort in the preparation stage.

Verification: The person then tries to evaluate and verify the ideas and solutions in this stage. It may result in some modifications of the solution. In some cases, the person may also need to go back to the first stage to gather or generate more information about the problem, thus more 'preparation' is required.

The process is cyclical. However, sometimes, if the person has good knowledge of the problem area, the stages may appear in a different order, directly proceeding to the stage of incubation or inspiration or even to the verification stage.

Self Assessment Questions I

1) The aspects highlighted in the standard definitions of creativity are .... and ....

2) .... thinking focuses on 'correct' answers, whereas .... thinking focuses on 'unique' answers.

3) Creativity shown by the significant contributions of a few eminent people is called as ....

10.4 APPROACHES TO CREATIVITY

Creativity has been approached differently by various theoretical perspectives.

Psychoanalytic approach of Freud views creativity as sublimation of drives or of wish fulfillment. It is discussed in the context of day-dreams and play. According to Freud (1958), unconscious processes play an important role in creativity. He highlights the defense mechanisms, particularly 'sublimation' which leads to creative expressions.

Behaviouristic approach to creativity focuses on forming new or novel connections and associations between stimuli and responses. Insightful learning is one example of creative thinking. Learning new associations helps in gaining insights or engaging in creative thinking. Thus creativity, in line with the behaviouristic principles, is consists of overt and observable behaviour.

Cognitive approach focuses on the cognitive processes such as attention, memory and flexibility in learning as playing an important role in creativity. Studies (e.g., Wallach, 1970) have found that broader attention enables the individual to take in a wider range of stimuli and memory traces than focused attention, and thus, helps in creativity. Cognitive approach also highlights the role of divergent thinking in creative ideas. It is based on Guilford's (1950) exploration of the divergent production of ideas and products. As we have discussed earlier, divergent production consists of abilities such as fluency, flexibility, originality and elaboration, which constitutes four significant aspects of creativity.

Information processing approach in the cognitive paradigm emerged in the early 1960's and focuses on the processing of information. Weisberg (1986, p.90) states that creative solutions develop when individuals find their initial solutions to be inadequate or ineffective.

They, then, try out new ways to solve the problem. Thus, they engage in restructuring of the information and the aspects of the problem and arrive at novel solutions.

Humanistic approach views creativity in terms of the self-actualization as proposed by Maslow. Creativity is reflected in the self-actualizing tendencies of human behaviour. This perspective can be related to the little c creativity. Rogers (1961) posits that "the actualizing tendency is the primary motivator for creativity as the organism forms new relationships to the environment in its endeavor most fully to be itself". He has identified three inner conditions for creativity: (a) extensionality: there is openness to experience, tolerance for ambiguity, and lack of rigidity; (b) an internal locus of evaluation in relation to one's own performance: they do not take others' judgements or criticisms as the guiding criteria, but their own inner satisfaction from engaging in creative work as the motivating force for them; and (c) the ability to play (or to toy with elements and concepts): they try to form new ideas, associations and relationships between various remote aspects or elements.

Differential approaches to creativity focuses on the four P's of creativity: the person, the process, the product, and the press. This is highlighted in the definition of creativity given by Plucker, Beghetto & Dow (2004). They have defined creativity as "the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context". This definition consists of the four aspects of creativity, that is, the person, process, product, and press (environment).

The *person* approach to creativity focuses on the personality traits of the person relevant for creative behaviour. It identifies the characteristics of creative people. Here you can recall the dispositional versus situational approach to personality which you have read in Unit 1. The person approach to creativity reflects the dispositional approach as it focuses on the individual rather than on the situation/context contributing to creativity.

The *process* approach refers to the mechanisms through which creativity occurs. It focuses mainly on the cognitive mechanisms underlying creative thinking and behaviour, e.g., Guilford's divergent production abilities. Thus, the process approach emphasizes the process of creativity in all the individuals rather than differentiating between creative and non-creative individuals as in the person approach.

The *product* approach to creativity puts emphasis on the final creative product which the individual has arrived at. It tries to identify the criteria or characteristic features of a creative product. As Simonton (2004) points out, the product approach is largely concerned with productivity and achievement and focuses on individuals' creations rather than their personalities or the processes facilitating creative production.

The *press* approach focuses on the situation or the context in which the creative person and the creative process operate and the creative product is generated. Thus it identifies with the situational approach to personality which highlights the environmental factors of the person. The press approach aims to identify the situational determinants of creativity. Runco (2004, p. 662) describes "freedom, autonomy, good role models and resources (including time), encouragement specifically for originality, (and) freedom from criticism" as contextual factors affecting creativity.

The Investment and Confluence Theory of creativity was proposed by Sternberg (2006). The theory states that creativity is a confluence of six resources such as intellectual skills, knowledge, thinking styles, personality, motivation and environment. This has implications for teaching the individual to use these resources, thereby, increasing the creativity.

Intellectual skills: It consists of a confluence of three skills, namely, analytic skill, synthetic

skill, and practical-contextual skill. Analytic skill refers to analyzing the ideas and weighing their relative values. Synthetic skill involves going beyond conventional thinking and engaging in new diverse ways of thinking. The practical-contextual skill involves taking into account the contextual factors and impressing upon others about one's creative ideas. All these three skills together are important for creative behaviour.

Knowledge: Knowledge about the problem or a field is important. It can be related to the preparation stage of creativity. If you do not have enough information about the problem, how will you see new associations between elements or derive new possibilities? However, it may also happen that your thinking will be constrained/guided by the existing knowledge only.

Thinking Styles: It refers to the individual's ability to think along new ways, and also to have the local as well as global perspective on the issue/problem.

Personality: Creativity is related to certain personality characteristics such as challenging the conventional practices/ways of thinking or doing, taking risks, tolerance for ambiguity, perseverance, courage, belief in oneself etc. These personality attributes help one to be more creative.

Motivation: Creativity involves intrinsic motivation as the person is internally motivated to engage in creative ideas and not for any external rewards. You have already learned in Unit 9 about intrinsic and extrinsic motivation. Intrinsic motivation implies enjoying the work one does and enjoying tackling the challenges.

Environment: The above five factors of intellectual skills, knowledge, thinking styles, personality and motivation are related to the person. Whereas, environment is an external factor. This is important in the sense that the five factors need a conducive and supportive environment for the development as well as expression of these factors.

Thus, the *investment and confluence theory* emphasizes that we need to invest in these six resources. Further, all these resources representing the factors related to the individual and the environment need to come together or confluence, giving rise to creative ideas. As Sternberg has stated, three points need to be noted regarding this confluence of resources: (a) a minimum threshold is required in each resource to be able to contribute to creativity; (b) a low level in one resource may be partially compensated by a higher level in another resource; and (c) high level in two resources may complement each other and increase the strength of creativity.

10.5 CORRELATES OF CREATIVITY

"Creativity represents a miraculous coming together of the uninhibited energy

of the child with its apparent opposite and enemy, the sense of order

imposed on the disciplined adult intelligence".

- Norman Podhoret

So, are creativity and intelligence totally mutually exclusive?

Creativity is associated with a wide range of concepts, such as motivation, imagination, meta-cognition, social influence, intuition, potential, leadership, humor, and mental illness (Runco, 2004). Research has explored how creativity is related to different constructs such as intelligence, personality, mood, learning, achievement etc. Here we will focus on the relationship of creativity with intelligence and personality.
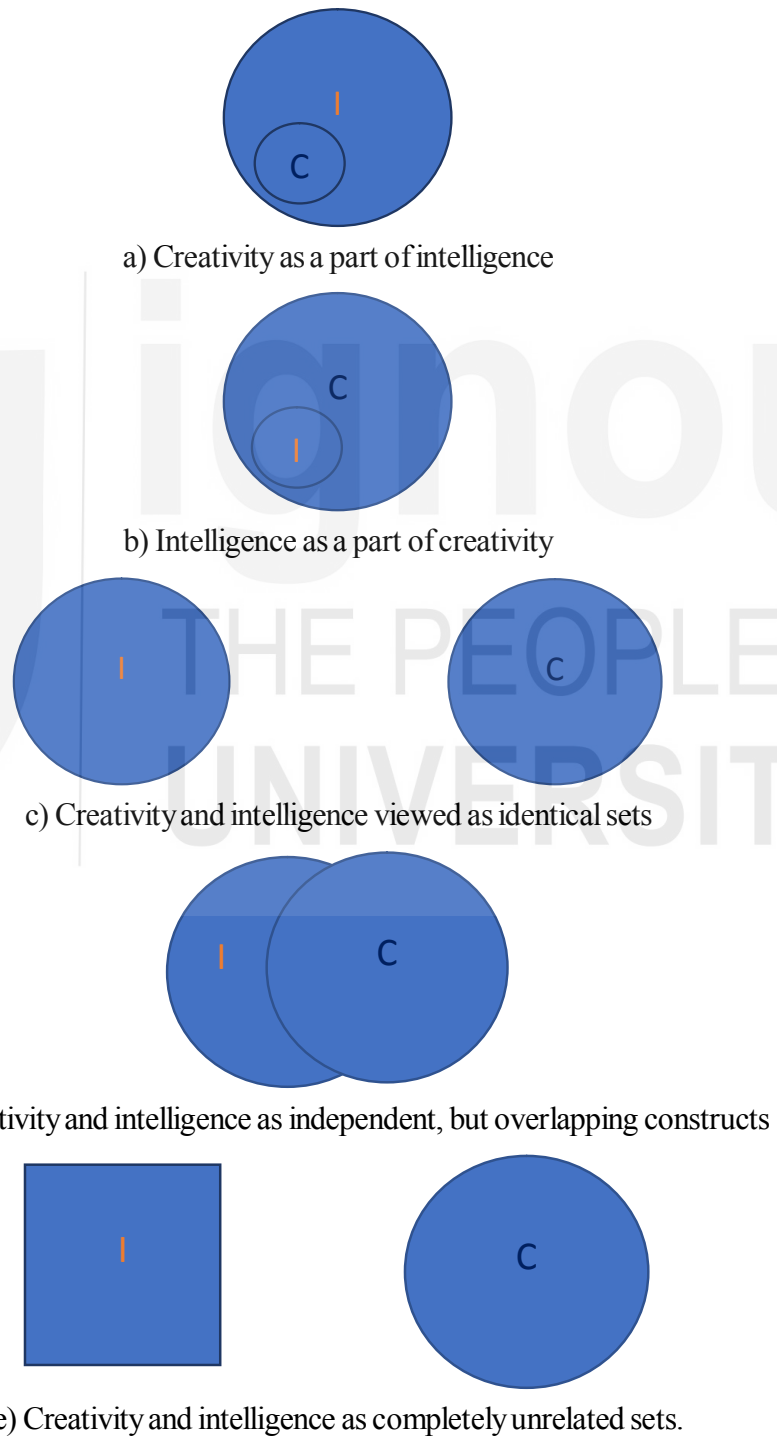
10.5.1 Creativity and Intelligence

Creativity and intelligence relationship has been widely researched and the 'threshold hypothesis' has been prominent. It states that high intelligence does not guarantee

creativity; but a certain level of intelligence (a particular threshold level) is required in order to be creative. Thus, an above average intelligence is necessary for high level of creativity (Guilford, 1967). Study by Jauk, Benedek, Dunst, & Neubauer (2013) supported this threshold hypothesis for the interplay between intelligence and creative potential. Further, they found that once the intelligence threshold is met, personality factors become more predictive for creativity. On the contrary, no threshold was found for creative achievement, i.e., creative achievement benefitted from higher intelligence even at fairly high levels of intellectual ability.

Sternberg and O'Hara (2000) have proposed five possible relationships between creativity and intelligence as you can see in the Figure 10bF below.

a) Creativity as a part of intelligence

b) Intelligence as a part of creativity

c) Creativity and intelligence viewed as identical sets

d) Creativity and intelligence as independent, but overlapping constructs

e) Creativity and intelligence as completely unrelated sets.

Figure 10bF: Relationship between Creativity and Intelligence

Guilford's structure of intellect model views creativity as a part of intelligence. In his model, divergent production ability, which is an important feature of creativity, is one of the several abilities he has proposed. Gardner's theory of multiple intelligences also views intelligence as the superset with creative contributions reflected in various areas such as music, language etc. On the other hand, Sternberg's investment and confluence theory of creativity considers intelligence to be a part of creativity. Here, intelligence is one of the six resources which together determine creativity.

10.5.2 Creativity and Personality

List the characteristics of a creative person who you think is creative. Now see the box listing out various characteristics of a creative person. Most likely, you have written many of the characteristics mentioned.

Personality Traits of Creative Individuals

- Verbally fluent, can express ideas well

- Values own independence and autonomy

- Enjoys engaging in intellectual matters

- Has wide variety of interests

- Has unconventional thinking, prefers to think in new ways

- Has aesthetic values

- Bold and courageous

- Willingly takes risks and faces challenges

Creativity cannot be explained only with intelligence. It extends beyond intelligence and relates to various personality attributes. Barron and Harrington (1981, p. 454) have differentiated between creative and non-creative individuals on the basis of their personality traits. Chamorro-Premuzic & Furnham (2005) have related the Big Five factors to creativity. They found positive relationship of creativity with openness to experience, neuroticism and extraversion; and negative relationship of creativity with agreeableness and conscientiousness.

However, creativity is too complex to be explained only by intelligence and personality. It also relates to motivation, interest, self-efficacy, and contextual factors. Hence, a comprehensive approach is required to study creativity.

Self Assessment Questions II

1) According to psychoanalytic approach, ... defense mechanism is more related to creativity?

2) Humanistic approach focuses on .... as the primary motivator for creativity.

3) The four P's of creativity are ...., ..., ...and ....

10.6 ASSESSMENT OF CREATIVITY

Assessment of creativity is difficult because it requires evaluating the quality of the creative product or creative thinking/behaviour. For instance, two persons may agree

on the novelty or originality of a music composition or a product; but there may be differences with regard to the utility/relevance of the creative idea or product. Nevertheless, the different tests of creativity are often based on the four main characteristics of creativity namely, fluency, flexibility, originality and elaboration. Further, the tests of creativity also vary in their focus on the product, person or the creative process.

The most commonly used tests of creativity are Guilford's (1967) Divergent Production Test (DPT), in which people make up varied responses to each test item; and Mednick and Mednick's (1967) Remote Associates Test (RAT), in which different items must be linked together with a single word.

The ***Divergent production test*** is based on Guilford's theory of intelligence. You can refer to Unit 4 for a quick recall of Guilford's theory of intelligence. The 'operation' of divergent production in his model refers to one's ability to produce a number of different yet relevant responses to an open-ended item like: "Name as many uses as you can think of for a cup", or "list as many consequences as possible, in one minute's time, if normal adult height remained at one metre only", or "how many pictures of real objects you can make using a circle, in one minute" etc. Thus tests of creativity aim at assessing word fluency, ideational fluency, associational fluency, expressional fluency, alternate uses of objects/things, consequences of hypothetical events, possible jobs symbolized by a given emblem, making objects from a set of given figure, and so on. A person providing varied responses to these tests scores high on divergent production, and thus, have high creativity.

Divergent Production Test battery consists of many tests based on different components of Guilford's divergent production. Another widely used test based on many aspects of Guilford's battery is *Torrance Tests of Creative Thinking* (TTCT). It consists of seven Verbal tests (thinking creatively with words), and three Figural tests (thinking creatively with pictures). *Baqer Mehdi test* is an adopted version of Torrance test of creative thinking. It consists of four subtests such as Consequences test, Unusual test, Similarity test, and Product Improvement test.

The ***Remote Associates Test*** of Mednicks' is based on their view of creativity as the ability to see relationships between ideas that are remote from each other, e.g., what single word is related to the words 'square root', 'coffee' and 'kitchen'? Such associations between word groups will require the individual to think in a novel and unique way.

Passi-Usha Test of Creative Problem Solving (PUTCPS) was developed by B. K. Passi and Usha Kumar (1996). It is a measure of creative problem solving in children as well as adults. The test consists of seven items and is non-verbal in nature (in drawing form). It assesses the originality and elaboration aspects of creativity.

Thus, there are various tests to assess creativity. Now let us see what are the various ways in which creativity can be enhanced in individuals.

10.7 WAYS TO ENHANCE CREATIVITY

Children are generally observed to be more creative than adults. Creativity in children can be observed in the form of symbolic play or imaginative possibilities they engage in. However, as children grow, our process of education and socialization focusing more on conformity, tend to suppress the creativity in them and even punish them for their expression of creativity. This poses a serious challenge for the development of creative

abilities in school children. Torrance (1965), based on his studies on third to sixth grade children, has identified five principles that teachers should implement in order to reward the creative behaviour of students.

- *Be respectful to unusual questions.*

- *Be respectful of imaginative, creative ideas.*

- *Show your students that their ideas have value.*

- *Occasionally have students do something 'for practice' without the threat of evaluation.*

- *Tie in evaluation with causes and consequences.*

- *Encourage the self-initiated learning and evaluate it.*

The expression of creativity can be fostered by activities as simple as child's play, which stimulates the imagination. Arieti (1976), a psychoanalyst, has proposed that a society can promote or inhibit the creativity of its citizens by its values and resources. He talked about a '**creativogenic society**', a type of society that promotes creativity. He specifies nine presumably creativogenic socio-cultural factors for a creativogenic society. These factors include, 1) the availability of cultural (and certain physical) means to all citizens without discrimination; 2) openness to cultural stimuli (in different aspects of human life); 3) stress on becoming and not just on being; 4) free access to cultural media for all citizens, without discrimination; 5) freedom, or even the retention of moderate discrimination, after severe oppression or absolute exclusion; 6) exposure to different and even contrasting cultural stimuli; 7) tolerance for diverging views; 8) interaction of significant persons; and 9) promotion of incentives and awards. He suggested that only the first factor is absolutely necessary and that "the other eight, although important, are not such factors that a tremendous effort on the part of the creative person could not overcome or remedy their absence" (Arieti 1976: 325)

Thus, the factors related to the socio-cultural environment are important – they may facilitate expressions of creativity or also act as barriers to creativity in individuals. Further, personal psychological factors also may affect creativity. A most common factor is the fear of failure or committing mistakes. People usually want to follow the beaten path because of their desire for security and the fear of unknown. There is also rigidity of thinking, lack of drive, difficulty in isolating the problem, failure to use multi sensory approach in learning, and inability to see remote associations etc. This limits the creative ideas and exploring new ways of doing things. Thus our *emotional and perceptual blocks* may act as barrier to our creative expression. Two more factors that have a negative impact on creativity are mental set and functional fixedness.

Mental set refers to perceiving things and responding to them in a set pattern, routine approach or stereotypical way. For instance, if we have solved a problem in a particular way, we tend to use the same method for solution when we face similar problem later on. Though it is obvious and practical to use the solution that has worked well in the past, sometimes it poses a problem as we may miss out on simpler and effective solutions. Mental set can be helpful as well as a barrier. It is helpful in the sense that it reduces the cognitive load as some aspects can be addressed/responded in a routine manner, thus saving our resources for tasks that require it. On the other hand, it poses as a barrier for creative thinking because of a set pattern of thinking.

Functional fixedness refers to the tendency to perceive things only in terms of their typical use or function. For example, we have learned that spoon is used to eat food

with. But can we think of using the spoon in a very different way, may be as a paper weight? Functional fixedness can be described as a type of mental set. Here, since the function of a particular object is fixed in our mind, we usually do not think outside of it, which hinders creative ideas.

Enhancing Creativity

Creative potential of an individual can be increased through various ways and methods. But there needs to be a general attitude and atmosphere of supporting or favouring creativity.

Principles for fostering creativity:

1) Introduce a variety of instructional materials need to be used to facilitate different forms of student expression.

2) Develop a favourable attitude towards creative achievement.

3) Provide encouragement for creative ideas and creative expression.

4) Foster the creative abilities of children through feedback and support.

5) Provide reinforcement for engaging in creative work.

6) Provide a supportive environment at school and home to foster a creative personality – being self confident, sensitive, independent, unconventional etc.

We now discuss a few techniques below which can be helpful for enhancing creativity.

- **Divergent thinking**: It includes thinking and behaving in divergent ways. It helps come up with multiple ideas that aid creativity. Further, the child can be given opportunities for original expression in many ideas, such as through written language, rhythms, music, art etc. Thus, fluency, originality and flexibility in producing ideas need to be encouraged in the children.

- **Brainstorming**: Osborn's (1957) brainstorming is a group approach to encourage creativity. It is a technique where people in a group setting are required to come up with as many ideas as possible without any self-censor or inhibition. Thus, they speak out whatever comes to their mind on a particular topic/issue without much thinking about it or postponing it or judging it. There are four basic guidelines for the group: (i) evaluation of ideas with held until later, thus ruling out criticism; (ii) the wilder the idea, the better; (iii) the greater the number of ideas, the better; and (iv) people can combine two or more ideas proposed by others. Osborn emphasizes that the spirit of the brainstorming session need be maintained by encouragement of each other, complete friendliness and relaxed mind.

- **Synectics** is a method developed by Gordon (1961) that encourages the use of analogies in creative thinking. The term Synectics is derived from a Greek word meaning "the joining together of different and apparently irrelevant elements". The method focuses on understanding the emotional and the irrational elements of a problem, which results in creative solutions. The method involves the use of analogy or metaphorical process, making the strange familiar; and the familiar, strange. It uses four kinds of analogies such as:(i) personal analogy, encourages you to place yourself directly in the situation; (ii) direct analogy, encourages you to find something else that solves the problem you are examining; (iii) symbolic analogy, uses objective, impersonal, or poetic images to describe a problem; (iv) fantasy analogy, frees your imagination from the boundaries of the normal world.

De Bono's (1985) **'Six Hats' method** helps to view an issue or a problem from a number of different perspectives. The method involves wearing each hat mentally and thinking according to the characteristic features of each hat. The idea is that when wearing any of the six possible fictional coloured hats imbued with certain qualities, the thinker emphasizes certain approaches to thinking. Thus, it encourages thinking from different perspectives, thereby leading to creative ideas and solutions.

Self Assessment Questions III

1) TTCT is based on which theory of intelligence?

   ....

   ....

2) What is The Remote Associates Test?

   ....

   ....

3) What is Synectics?

   ....

   ....

10.8   LET US SUM UP

In this Unit, you learned about an important concept which is also often neglected in the conventional educational system. Creativity is a much required as it can help human beings reach their full potential. The meaning of creativity was elaborated highlighting the aspects involved in it. The different stages of creativity were described. Theoretical perspectives explaining the nature of creativity were discussed. Further, aspects of testing creativity were discussed and some of the widely used tests of creativity were mentioned. Relationship of creativity with two important constructs of intelligence and personality was elaborated. Finally, different ways to enhance creativity was described.

10.9   KEY WORDS

Divergent thinking	:	refers to thinking and behaving in varied or divergent ways.
The little c creativity	:	is marked by personal effectiveness, and highlights the resourcefulness and the agency of the ordinary people.
The big C creativity	:	is focused more on the significant contributions of selected people who have excelled in various fields.
Creativogenic society	:	refers to a type of society that promotes creativity (Arieti, 1976).
Mental set	:	refers to perceiving things and responding to them in a set pattern, routine approach or stereotypical way.

Functional fixedness	:	refers to the tendency to perceive things only in terms of their typical use or function.
Brainstorming	:	is a technique where people in a group setting are required to come up with as many ideas as possible without any self-censor or inhibition.

# 10.10 ANSWERS TO SELF ASSESSMENT QUESTIONS

Self Assessment Questions I

1) originality and usefulness

2) convergent, divergent

3) big C creativity

Self Assessment Questions II

1) sublimation

2) self-actualization

3) person, process, product, press

Self Assessment Questions III

1) Guilford's theory of intelligence

2) The *Remote Associates Test* of Mednicks' is based on their view of creativity as the ability to see relationships between ideas that are remote from each other.

3) Synectics is a method developed by Gordon (1961) that encourages the use of analogies in creative thinking
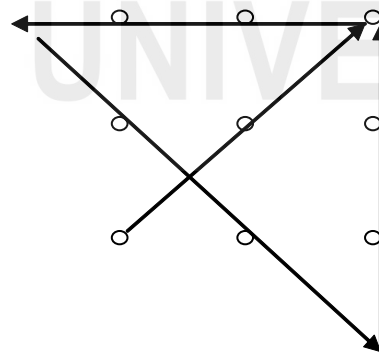
Answer to the Nine dots problem (Fig 10aF)

10.11 UNIT END QUESTIONS

1) Describe the key aspects of creativity.

2) Explain the differential approaches to creativity.

3) Analyze the Investment and Confluence Theory of creativity.

4) Explain the relationship between creativity and intelligence.

5) Describe the ways of enhancing creativity in individuals.

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