Chapter 2
THEORETICAL OVERVIEW

2.1. DRAWING.

2.2. GRAMMAR OF DRAWING.

2.3. DRAWING SKILL.

2.4. THEORIES BEHIND THE DRAWING SKILL ORIENTED INSTRUCTIONAL APPROACH.
THEORETICAL OVERVIEW

2.1 DRAWING

Drawing is the basic and essential mode of expression. It is the process of thinking, imagining, seeing connections, inventing and expressing in unique visual form. It is a graphic record of mental impressions received through the eyes. In other words it is the art of representing upon a flat surface the forms of objects and their positions and relations to one another. A drawing in Basic Science implies an artistic representation of objects which carries on through systematic procedures, using scientific laws and principles. Everyone can draw, if they have a mental set and got enough guidance and practice at the right time.

2.2 GRAMMAR OF DRAWING

A set of rules used to govern a language is called grammar. In otherwise, grammar means the system of rules that implicit in a language or the basic principles of an area of knowledge. Any symbol through which perceptions, thoughts, and feelings can be articulated, expressed and communicated is called a language. Intellectual development, learning, mental health, communication, and social integration are the basic functions of a language. Drawing fulfils all these functions.

Drawing is a universal visual language that is built upon fundamental principles and elements. The principles of drawing are the organizational rules used in conjunction with the elements to create order and visual interest (Evans & Thomas, 2003). Student must have some sense of understanding of the basic elements and principles of drawing or fundamentals of drawing in
order to become good in drawing. These are the building blocks used to create a work of art.

2.2.1 Basic elements of drawing

If we consider drawing as language for communication, then the lines are the letters, shapes are the words and forms are sentences. By combining these forms we can make images or representations of things and by meaningfully arranging and relating these images we can convey an idea through an artwork. The elements of drawing are the components that make up a drawing. All drawings will contain most of the elements of drawing. Nathan Cabot Hale (1993) enlisted and explained the elements of drawing in his book ‘Abstraction in Art and Nature’. The elements used in creating a drawing are a) mark b) line c) shape d) colour e) texture f) space and g) size and proportion.

a. Mark

A mark is the smallest and most basic element in drawing. It could be a dot or a point or a single spot on a page. A dot or point is the most condensed form of a sphere, in otherwise a sphere is an elaboration of dot. These can vary in size, value and regularity. It can be used alone or as a unit in a group which forms a line or shape in the drawing. Marks can be used to form a value or pattern (placed together forms a darker value, further apart forms a lighter value), or to delineate space (larger means closer).

Figure 2.1 dot as a mark
b. Line

The ancient drawings on caves and walls begin with a few simple lines that are very much like the stick figures that children draw. Line is a mark with greater length than width. These are the words used to identify shapes in a drawing. Lines can be horizontal, vertical, dotted, zigzag, curved, straight, diagonal, bold, or fine. Lines can show direction, lead the eye, outline an object, divide a space, and communicate a feeling or emotion. They can form shapes, patterns and texture. Lines can be used in hatching and cross-hatching to shade forms. As well as shading, these cross-hatched strokes can also provide directional movement in a work. Unity in an image can be obtained by the orchestration of lines, in one direction, two or more, or in an all-over manner. So lines are used to create feelings, denote direction, movement and position, explain texture, pattern and composition, and communicate themes in a drawing.

![Figure 2.2. Different types of lines](image)

All lines have direction - Horizontal, Vertical or Oblique. Horizontal suggests calmness, stability and tranquillity. Vertical gives a feeling of balance, formality and alertness. Oblique suggests movement and action.
c. Shape and form

Shape is a closed line or it is an enclosed space defined by a line by contrast to its surroundings. Shapes can be geometric or organic. Shapes are flat and can express length and width. It is a self contained defined area of geometric or organic form.

Basic geometric shapes and forms

The easiest shape to recognize is a circle. It has no straight edges. It is the two dimensional representation of a sphere. The student can see circles all over the place.

![Figure 2.3. A circle](image)

An elongated circle is called an oval. Actually this shape is technically called an ellipse; an oval is a more general term for anything egg-shaped, so that one side can be fatter than the other.

![Figure 2.4. An oval](image)

A triangle is a simple shape. A triangle is a closed shape that has three sides. A student can make triangles that are tall and thin ones or short and fat ones, or totally irregular ones.
If you have a shape with four equal and straight sides, it's a square. This is another regular shape. This is a rectangle or oblong shape. It's one of the most commonly seen shapes in everyday life. A rectangle has four sides, and four square corners, but two of the sides are longer than the other two. A square is actually a specific type of rectangle that has all four sides the same. Parallelogram is a squashed rectangle. The five-sided figure is a pentagon. A six-sided figure is a hexagon. There are many more polygons. A heptagon is a seven-sided figure; an octagon is an eight-sided figure, and so on.

Once the student learns to see these simple shapes in more complicated objects, he can draw anything. Using basic shapes as foundation of drawings will allow the student’s drawing to achieve a realistic look.
Form refers to the three-dimensional quality of an object. It refers to the existing shape of, giving shape to, taking shape of a particular thing. That is, a shape or a group of shapes in three dimensions is called form. Forms express length, width, and depth. Spheres, cones, ovoid, cylinders, and cubes are the common simplest geometrical forms found.

The importance of sphere as a basic form in nature

The sphere is the most elementary and basic form found in nature. The universe, the atom, water drop—all have spherical in form. Other forms exist in nature whether it is artificial or natural are derived from sphere. It is the most flexible and permanent form. All other forms are derived from sphere due to
the simple operation of mechanical forces based on the universal laws of nature. All forms take its shape also due its function.

**Figure 2.9  All forms in nature are derived from sphere**

The sphere appears in nature whenever a surface wants to be as small as possible. Of all the forms, a sphere has the smallest surface area for a volume. Examples include bubbles and water drops. A water drop is perfectly symmetrical. It has no edges or corners. All points on the surface are the same distance from the centre. Water drops are actually spherical in its form but it appears to us as an unduloid form or pear shaped due to the balance of forces between gravity and surface tension. In the case of a honey bee comb each cell is spherical, but it assumes hexagonal shape because of tight packing of adjacent cells. So the basic of drawing is the sphere.

**Figure 2.10  Variations of sphere found in nature**
d. Colour

Form cannot be perceived except colour. Colour is the reaction of the form of an object to the rays of light by means of which we perceive it. Simply, colour is the light reflected from the object. It is a superficial quality. It has a direct effect on our senses. Colour has three main characteristics-hue or its name (red, green, blue, etc.), value (how light or dark it is), and intensity (how bright or dull it is). As an important element, colour can be used to create depth, harmonies, contrasts, unity and variety in drawings. The three primary colours in pigment are red, blue, and yellow. Secondary colours are green, violet and orange. The term 'hue' means the actual colour, like red, green, etc. Complementary colours are red and green, yellow and purple and orange and blue. Warm colours are those with more yellow in them; cool colours generally have more blue in them. Colour can also be used to create a mood or emotional quality, with varying intensities and hues, and combinations of colours. Colour is also used to emphasize the texture.

![The colour wheel]

**Figure 2.11** The colour wheel

Value is the lightness or darkness of a colour. Value is also called Tone. Colours have values of varying lightness and darkness. Value is
relative. When something is dark, it is dark in relation to something else which is lighter. That is, a medium dark object, when placed next to a black object, will appear lighter, but next to a lighter tone will appear darker.

e. Texture

Texture is the surface quality of form - rough, smooth, soft, hard, glossy etc. Texture can be physical or visual. It can be seen and felt. Texture refers to a repeated pattern seen in some materials, as represented in a drawing- fur on an animal, weave in a fabric, etc. In simple drawings however, texture is illustrated through the application of visual elements such as patterning of dots, lines, shapes, etc. Visual textures are created with repetition of various kinds of marks. The use of texture in patterns and repetition can also form visual rhythms in a drawing. Visual texture can add a great deal of interest and dynamic energy to drawings.

Figure 2.12 Texture styles
f. Space

Space is the area between and around the forms. The space around forms is called negative space and the filled area is called positive space. Space can also refer to the feeling of depth. Real space is three-dimensional. In a drawing, feeling or illusion of depth is also called space. Space is a complex element in drawing. Perspective is the illusion of space that further away things appear smaller, and closer objects appear larger. Perspective will appear to alter proportion when perspective is executed correctly.

![Figure 2.13 Positive and negative space](image)

**Figure 2.13 Positive and negative space**

g. Size and proportion

Proportion is the size of one form in relation to the size of another. It is simply the relationship between objects or parts of a whole. It is a comparison of sizes, shapes, and quantities. Correct proportion elicits beauty and harmony in a drawing.
2.2.2 The principles of drawing

There are some principles which arise from the combination of two or more forms. It is the rules that govern the way one form is related to another or to several others. How students apply the principles of drawing determines how successful he or she is in creating a drawing. William Lidwell (2003) roughly stated the principles of drawing. The principles of drawing are

a) balance and symmetry b) gradation and movement c) repetition and pattern d) unity e) variety f) proportion and scale g) rhythm h) contrast i) harmony j) emphasis k) composition and l) perspective. Their purpose is to suggest the condition of related forms.

a. Balance

Balance is the distribution of the visual weight of forms, colours, texture, and space. Elements should be balanced to make a drawing feel stable. In symmetrical balance, the elements used on one side of the drawing are similar to those on the other side; in asymmetrical balance, the sides are
different but still look balanced. In radial balance, the elements are arranged around a central point and may be similar.

![Figure 2.15 Evidence of different types of balance in a drawing](image)

**b. Gradation and movement**

Gradation of size and direction produce linear perspective. Gradation of colour from warm to cool and tone from dark to light produce aerial perspective. Gradation can add interest and movement to a form. A gradation from dark to light will cause the eye to move along a form. Movement is the path the viewer’s eye takes through the drawing, often to focal areas. Such movement can be directed along lines, edges, shape, and colour within the drawing.
c. Repetition and pattern

Repetition with variation is interesting, without variation repetition can become monotonous. Pattern is the repeating of an object or symbol all over the drawing. Repetition works with pattern to make the drawing seem active. The repetition of elements creates unity within the drawing.
d. Unity

Unity relates the drawing elements to the idea that is being expressed in a drawing. Unity in a drawing refers to the visual linking of various elements.

e. Variety

Variety is the use of several elements of drawing to hold the viewer’s attention and to guide the viewer’s eye through the drawing.

f. Proportion and scale

Proportion is the relation and size of elements used in a drawing. Proportion is the feeling of unity created when all parts related well with each other. Proportion can refer to the size of one part compared to the rest of the drawing.

![Scaled Up and Scaled Down Examples]

Figure 2.18  Proportion and scale in drawing

g. Rhythm

Rhythm is created when one or more elements of drawing are used repeatedly to create a feeling of organized movement. Variety is essential to keep rhythm exciting and active, and moving the viewer around the drawing. Rhythm creates mood.
h. Contrast

Contrast is the juxtaposition- side by side placement- of opposing elements e.g. Opposite colours (red / green, blue / orange) tone or value (light/dark) and direction (horizontal/vertical). Too much contrast scattered throughout the drawing can destroy unity.

i. Harmony

Harmony in drawing is the visually satisfying effect of combining similar, related elements. e.g. adjacent colours, similar shape etc.

j. Emphasis

Emphasis is the part of the drawing that catches the viewer’s attention. It is the area of primary visual importance. Usually the artist will make one area stand out by contrasting it with other areas. The area will be different in size, colour, texture, shape, etc.

k. Composition

Composition is the sum total of all these principles. Purpose of composition is to organize all the elements which make up a drawing into a coherent pattern, pleasing to the senses. Each and every objects and things has it’s own composition. A Basic Science student who is curious to know about a thing should try to find out its composition.

l. Perspective

Knowing how to draw perspective is important to creating depth in a drawing. It is used to make the illusion of distance in drawing. It creates a three dimensional effect on two dimensional surface. Before starting the perspective drawing practice students should know about some key concepts in perspective drawing. They are -
The station point - It represents the position of the observer's eyes. Therefore, the position of the station point greatly influences the perspective.

Picture plane and Ground plane - Picture plane is an imaginary vertical plane placed between the eye and the object to be drawn. This plane is the plane of drawing surface. Ground plane is also an imaginary horizontal plane where the object of drawing is resting. It is perpendicular to picture plane. The limits of the ground plane may be indicated on the picture plane as two separate lines—the ground line and the horizon line. The ground line intersects the picture plane at the bottom, and defines the lower limit of the drawing.

The horizon line or eye level line - it is an imaginary line which runs across the picture plane (paper) at the eye level of the viewer. The horizon line is where the sky appears to meet the ground. It is the upper limit of ground plane.

The vanishing point - Perspective drawing is based on the fact that all lines extending from the observer appear to converge or come together at some distant point. It should be located near the centre of the horizon line. The vanishing point is where all parallel lines that run towards the horizon line appear to come together like train tracks in the distance.

Perspective is essential to add depth in a drawing. There are mainly two types of perspectives. They have been termed one and two point perspective. The only difference between these two perspectives is that there is only one vanishing point in one point perspective and two vanishing points in two point perspectives.
One-point perspective

1. To begin, draw a horizontal line, and pick any point on that line to place your vanishing point. 2. Now, draw a square anywhere below or above the horizon line. 3. Next, draw a line from each top corner of your box to the vanishing point. 4. To finish your box, draw a horizontal line between the lines drawn, and erase the unwanted lines.

![Figure 2.19 One-point perspective of cube](image)

One-point perspective may be one of the easiest ways of drawing perspective. One of the easiest ways to create depth in your drawing while using the principles of one-point perspective is through the variation of size and arrangement of elements in drawing. Make objects appear closer or farther away by changing the size and placement of a subject in the picture plane.

Two-point perspective

1. Draw horizon line and two vanishing points towards each end. 2. Next, draw a line below or above the horizon line, and in between the two vanishing points. 3. Now, connect each point of the line drawn in step two to both vanishing points. 4. Draw two vertical lines to start creating a cube. 5. From
the top point of our new lines, draw another line to the respective vanishing point. 6. Finish by erasing unwanted lines.

![Perspective Diagram](image)

**Figure 2.20 Two-point perspective of a cube**

So in conclusion, when a line crosses itself or intersects with other lines, it encloses a space and creates a shape. Shape is two-dimensional and has heights and width but no depth. Value creates depth in a drawing with lights and shadows. Value is the range of lightness and darkness within a drawing. It illuminates the colour of the subject. It gives an illusion of distance in a drawing. As a beginner the student uses crayons or colour pencils to create colour. Texture also refers to the way a drawing is made to look rough or smooth. Simply, lines create shapes, and shapes represent forms by adding colours, shades and shadows using the perspective rules. This all comes together to create an illusion of depth and gives a realistic look to drawings.

**2.3 DRAWING SKILLS**

To express ideas, observations and concepts visually on a plane of paper requires skill, which are acquired through proper training. Drawing is a manipulative skill and involves the ability to use one’s hands and fingers with dexterity. Developing this skill is vital to mastering hand-to-eye coordination. It
is a prerequisite for developing the visual perception and facilitates the learning of Basic Science.

2.3.1 Drawing skill development in children

Psychological studies have established a series of stages in the development of drawing skill among children. Some of the theoretical models that explain children’s artistic development are given below.

2.3.1.1 Kellogg's Developmental stages of child drawing

In Kellogg’s view (1969) while drawing, children progress through the following stages.

1. The Scribble Stage or Random Scribbling (ages 1½ - 3yrs) - In the scribble stage a child does not have control over hand movements. The product is not important to the child.

2. Basic Forms Stage or Controlled Scribbling (ages 2-4 yrs) - This stage is signified by the introduction of geometric shapes such as circles, ovals, squares, triangles and crosses into the child’s art. Children gain muscle control and eye-hand coordination. They repeat shapes, hold their tools and have a growing control over materials.

3. The Pictorial Stage (ages 3-5 yrs) - Children realize that there is a relationship between objects they have drawn and the outside world, and that the drawing can be used to record ideas. Shapes from their environment begin to appear in the child’s art.

4. Symbolic Stage (ages 5-7 yrs) - Child begins to depict abstract concepts. He has moved into the Symbolic Stage. Children begin to draw articulated features. Baselines appear in drawings.
2.3.1.2 Lowenfeld’s stages of artistic development

According to Lowenfeld (1957) there are six clearly defined stages of artistic development. The six stages of artistic development are-

1. Scribble Stage (1-3 yrs) - Children at this age are engaged in the physical activity of drawing. There is no connection made between the marks and representation during most of the scribble stage.

2. Pre-schematic Stage (3-4 yrs) - Children at this stage of artistic development are beginning to see connections between the shapes that they draw and the physical world around them. Circles and lines may be described as people or objects. In this stage the child communicating through their drawings.

3. The Schematic Stage (5-6 yrs) - Children clearly assigned shapes to objects. They often have developed a schema for creating drawings. There is an order in the development of the drawing. Drawings at this stage have a clear separation between the sky and the ground. Objects are often placed on the ground instead of floating in space. Objects of importance are often drawn larger than objects of lesser importance.

4. The Dawning Realism (7-9 yrs) - At this stage, children are more critical of their own drawing. Overlapping can be seen and a sense of spatial relationships is more evident. The child finds that schematic representation no longer suffices to express reality. Drawings are with more detail for individual parts, but are far from naturalism in drawing. Children begin to compare their drawing and become more critical of it.

5. The Pseudo-Naturalistic Stage (10-13 yrs) - In this stage the product becomes most important to the child. The use of value and light is now
apparent in drawings. Children at this stage are very critical of their own success. Success is determined by the level of realism achieved in the drawing. So, this stage marks the end of drawing as spontaneous activity because children are increasingly critical of their drawings. Frustration is a common occurrence. It is important to encourage students at this stage.

6. The Decision Stage (13-16 yrs) - Because of the self criticism and loss of confidence inherent at this stage, many children view drawing as a skill that they do not possess. Others, however, decide to continue on drawing skills and continue to develop. So, it is important to encourage students to continue drawing despite their level of skill. Any skill can be attained through practice.

2.3.1.3 Betty Edward’s Creative and Mental Growth


1. The scribbling stage - Random scribbles begin at the age of one and a half, but quite quickly take on definite shapes. Circular movement is first because it is most natural.

2. The stage of symbols - In this stage, a symbol can stand for a real thing in the environment. Circular form becomes a universal symbol for almost anything. Later symbols become more complex, reflecting child’s observations on the world around him.

3. Pictures that tell stories - At the age of four or five, the child begins to tell stories or work out problems with drawings. Basic forms are needed to express meaning.

4. The Landscape - By the age of five or six, children develop a set of symbols to create a landscape. A blue line and sun at the top of the page and
a green line at the bottom become symbolic representations of the sky and ground. Landscapes are composing carefully. Removing any single form would throw off the balance of the whole picture.

5. The stage of complexity - At the age of nine or ten, children try for more detail, hoping to achieve greater realism. Concern for where things are in their drawings is replaced by concern for how things look.

6. The stage of realism - The passion for realism is in full bloom. There is a conflict between how the subject looks and previously stored information. There is a struggle with spatial issues as they learn how to see.

7. The crisis period - The children at the age of 8-12 are in a stage of complexity and realism. They are in the crisis period. At this age, children try for more detail, hoping to achieve greater realism in their drawings. The beginning of adolescence marks the end of artistic development among most children.

Edwards believes that proper teaching methods and approaches will help children learn to see and draw and prevent this crisis.

According to Edwards, the five perceptual skills of drawing are-

1. The perception of edges
2. The perception of spaces
3. The perception of relationships
4. The perception of lights and shadows
5. The perception of the whole, or gestalt

**2.3.1.4 Herbert Read’s stages in child drawing**

Read (1966) explained seven stages of development in children’s drawings.
1. Scribble (age 2-5 with peak at 3) – there are four types of scribbling are explained by Read. They are purposeless scribbling, purposive scribbling, imitative scribbling and localized scribbling.

2. Line (age 4) – visual control is now progressive. Human figure becomes favourite subject with circle for head, dots for eye, and a pair of single lines for legs. A complete synthesis of parts is unobtainable and often unattempted.

3. Descriptive symbolism (age 5-6) – Figure now reproduced with tolerable accuracy but as a crude symbolic schema. The features are localized in the roughest way and each is a conventional form.

4. Descriptive realism (age 7-8) – drawings are still logical than visual. There is a gathering interest in decorative details.

5. Visual realism (age 9-10) – the child passes from the stage of memory drawing and imaginations to the stage of drawing from nature. There are two phases. They are two dimensional and three dimensional.

6. Repression (age 11-14) – characterized by the progress in the attempt to reproduce objects. The child becomes disillusioned and discouraged. Interest is transferred to expression through language and the drawing performance is decreased.

7. Artistic revival (early adolescence) - From about the age of 15 drawing blossoms into genuine artistic activity-show a love of richness in colour, grace in form and beauty in colour.

All these theories propose a similar pattern of development in child drawing - progressing from scribbling to realistic representation. The above described theories suggest that, generally there are four stages of children's
artistic development: - scribbling, pre-symbolism, symbolism, and realism. Other generalizations are:

-Socioeconomic factors seem to have little influence on the earliest stages.
-Children’s drawings typically show greater development than paintings because crayons, markers, and pencils are easier to control than paint and a brush.

-Considerable overlapping exists between stages. Two stages may be represented in one drawing.

-Development in drawing is not universal and is dependent on the environment in which a child grows up and is educated.

From the discussion it is clear that, by the age of nine to twelve, many children exhibit greater visual awareness of the things around them. As a result, they become increasingly conscious of details and proportion in what they are drawing. In trying to draw realistically, children often fail to attain the level of their expectations and they quickly become disappointed. Visual description and observational techniques are beneficial at this age. Proper instruction enables them to develop the drawing skills.

2.3.2 Drawing skill classification

Drawings are ‘external symbol systems’ to represent the real world (Van Sommer, 1984). The act of drawing is a "graphic engine or a production system” that helps the student to generate concepts. To enlist and classify the drawing skills, the investigator used the following findings as guidelines.

1. Lampert’s artistic inquiry types

Lampert (2006) identifies three dominant types of artistic inquiry. They are 1.Aesthetic inquiry (questions the value, definition, meaning and nature of
art); 2. Critical inquiry (explores and investigates a specific piece or body of artwork); and 3. Creative inquiry (explores creative expression).

2. Frank William’s taxonomy for creative thinking


3. Broudy’s Theory of Aesthetic Scanning

The process of aesthetic scanning is described by Harry S. Broudy (1987). His theory gave importance to sensory, formal, technical and expressive properties of drawing for describing, analyzing, interpreting, and making judgments about a drawing. Each property is briefly described below.

1. Sensory (descriptive) Properties - It focuses on the art elements of line, shape, texture, and colour e.g. Tones and use of colours, number and type of lines, type and size of shapes, depth of perspective etc.

2. Formal (analysis) Properties – It deals with the way the art work is organized - Unity, repetition, balance, contrast, dominance, rhythm and variety. e.g. repeated shapes, opposite things, one thing more is important than other, something being changed, light/dark things etc.

3. Expressive (interpretation) Properties – these domain deals with the mood, feeling or philosophical concepts of the work. e.g. sad/happy work, what is the artist telling us, would you like this, feel good/bad etc.
4. Technical (judgment) Properties – it deals with how the work was created. e.g. the medium used (watercolour, oil paint, acrylic, bronze, wood, etc.), the tools used (brush, pencil, crayon, ink, pen, printing press, camera, etc.), the method used to make the work (drawing, photography, painting, sculpturing, printing, etc.).

2.4 THEORIES BEHIND THE DRAWING SKILL ORIENTED INSTRUCTIONAL APPROACH

Mainly the theories of Romiszowski (1999), Csikszentmihalyi (1990), Armheim (1983) and Vijoy Prakash (2007) were used as guidelines to develop the Drawing Skill Oriented Instructional Approach.

2.4.1 Skill-mastery model by Romiszowski

Romiszowski (1999) proposed a “skills cycle” that involves a cycle of stages starting from the reception of information and leading to specific action in a given environment. Romiszowski describes that the information-processing occurring in the mind of learner during the execution of a skill. He provides a model of psychomotor and cognitive actions involved. According to Romiszowski there are three basic categories of skilled behaviours:

perceive — perform
perceive — recall prerequisites — perform
perceive — recall prerequisites— plan — perform
Romiszowski suggests a skill-mastery model of five stages in the development of psychomotor skills:

Stage 1: Acquiring knowledge.

Stage 2: Executing the actions in a step-by-step manner.

Stage 3: Transfer of control from the eyes to other senses.

Stage 4: This stage is characterized conscious attention and thinking through the actions.

Stage 5: Generalization of the skills to a greater range of application situations.

This model suggests three basic steps in the overall instructional process:

Step 1: Imparting the knowledge content.

Step 2: Imparting the basic skills.

Step 3: Developing proficiency.

2.4.2 Flow theory of Csikszentmihalyi

Mihaly Csikszentmihalyi (1990) discovered that people find genuine satisfaction during a state of consciousness called Flow. In this state they are completely absorbed in an activity, especially an activity which involves their
creative abilities. The key aspect to flow is control. In the flow state, we exercise control over the contents of our consciousness. Csiksentmihalyi defines flow as “a state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it. The finished product was less important. The process of doing the work is important. External rewards were less important than intrinsic pleasure.

Flow is created by activities with a specific set of properties. They are challenging, require skill, have clear and immediate feedback and have well defined success or failure metrics. Flow is a constant balancing act between anxiety, where the difficulty is too high for the person’s skill, and boredom, where the difficulty is too low.

![Figure 2.22 Learning stages in flow theory by Csikszentmihalyi](image)

Thus ‘flow’ is dynamic rather than static state. He identifies a number of different elements involved in flow:
1. Clear goals.
2. Immediate feedback.
3. Balance between challenges and skills.
5. Distractions are excluded from consciousness.
6. There is no worry of failure.
7. Self-consciousness disappears.
8. The sense of time becomes distorted.
9. The activity becomes an end in itself.

Csikszentmihalyi has suggested that over learning a skill or concept can help people to experience flow. Another critical concept in his theory is the idea of slightly extending oneself beyond one's current ability level. This slight stretching of one's current skills can help the individual to experience flow. In short Flow involves a challenging activity that requires skills. Too high a challenge will produce anxiety; too easy an activity will produce boredom.

Good and immediate feedback allows the individual to know they have succeeded. Such knowledge creates order in consciousnesses. When one is thoroughly absorbed in an enjoyable activity there is no room for troubling thoughts. Then the individual feels that he is merging with the activity.

In addition to making activities more enjoyable, flow also has a number of other benefits. Flow can lead to improved performance. Flow can also lead to further learning and skill development. Because the act of achieving flow indicates a strong mastery of a certain skill, the individual must continually seek new challenges and information in order to maintain this state.
2.4.3 Gestalt theory in drawing by Armheim

Gestalt is a German word for shape or form. Gestalt theory in drawing by Armheim (1983) is based on two concepts. The first concept states that parts of a visual image have their own values and meanings. Therefore, it can be considered, analyzed, and evaluated as distinct components. The second concept of the theory states that the whole is greater than the sum of its parts. When individual elements are interpreted together, there is a more important meaning. According to Armheim intellect is a linear or sequential analysis, while intuition is a synthesis of the entire structure. Intuition enables us to perceive and interpret the relations between various elements of a subject. A child perceives the world in terms of general concepts.

According to Arnheim there are four critical factors necessary for the creation of a drawing- the learner’s exploration and technical control of the medium of representation; the kinds of perceptual qualities which the learner has assimilated from the object, the learner’s fluency in the use of cultural conventions, and the learner’s capacity to find a correspondence between salient properties of the object and the forms available in the chosen medium.

2.4.4 Systems Model of Creative Learning by Vijoy Prakash

Vijoy Prakash (2007) developed Systems Model of Creative Learning based on natural learning process and symbolic method of learning to offer a comprehensive plan for integrating creativity in learning process. In this model the first phase is to receive stimuli through various sensory organs. The set of such stimuli works as raw data for processing. These data when processed
become information. The information so obtained is stored for further processing in our brain as and when required. Then, the processed information leads to certain behavioural changes in us, which find expression in various ways.

According to this model the learning process can be conceived in three phases.

Figure 2.23 Three phases in Systems Model of Creative Learning

2.4.4.1 Receptive phase

This is the phase when the learner receives information using sensory organs. Information can be received through visual observation, auditory observation, olfactory observation, tasting observation and touch observation. Observation can be further classified into primary observation, secondary observation and tertiary observation.

2.4.4.2 Processing phase

The second phase of learning is the processing of information received through various sensory organs. It is stored in the brain without any logical sequencing. This information in the brain is processed in two ways—rationally and emotionally. It includes analysis, synthesis, and inductive, deductive, reflective, empathetic, meta cognitive and creative types of thinking.
2.4.4.3 Productive phase

The information processed in the processing phase works as a stimulus for activating different loco-motor systems. This leads to performance of various activities by a person. The kind of activity that one performs depends on the particular production style of the person. Production style is depending on the environment in which the person is brought up and on the aptitude of the person.

Since the aim of the study was to find out the Effectiveness of Drawing Skill Oriented Instructional Approach on achievement in Basic Science and in drawing skill development of primary school students, a Drawing Skill Oriented Instructional Approach was developed by the investigator by integrating the theories of Romiszowski(1999), Csikszentmihalyi(1990), Armheim(1983) and Vijoy Prakash(2007).