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Geometrical Motifs in Bharatanatyam

S. Subbulakshmi

Director, School of Music and Fine-Arts
Vels University (VISTAS), Chennai, Tamil Nadu, India

 <https://orcid.org/0000-0003-3277-0926>

Abstract

Artists express their emotions and feelings through geometrical shapes which is one of the best way to express their notions. Calmness is represented by the shape circle whereas anxiety and distress are represented by the shape square. Artists use geometrical shapes in their art to suggest balance and order. Artists show geometrical shapes in order to illustrate or emote the illusion of realism. Geometry is one of the easiest way to see the relations of mathematical concepts to dance. Since dancers form shapes with their body, arms, legs as they move while dancing. They form beautiful shapes of tessellations by moving all around the stage. Dance is the movement of the body in a rhythmic way through music with in a specific space. The changing of shapes are to demonstrate an act, a feeling or an idea. In group dance choreography often includes geometric shapes like triangle, rectangle and circular shapes using their whole body or hands or legs. Dance uses mathematics like Algebra, pattern of 2 D, 3D shapes which fit perfectly together without any gaps, repeated patterns, sequences and disparity. Dance uses numbers, counting beats in the form of jathis, rhythmic syllables like takita, tatikinatam, Intonation, syncopated time patterns and rhythmic structures.

Keywords: Geometry, Motifs, Mathematics, Adavus, Lines, Shapes.

Introduction

Motif is an important usually repeated idea or theme in a work of Art. It is a feature in a decoration or design. A motif generally reinforces the theme of the program. Geometric motif is a design which represent abstract, non figurative shapes, depictive shapes like Lines, round and oval shapes, Triangles, Squares, Rectangles and diamond shapes are projected as a rule for complicated and simple patterns. Artists use geometrical shapes in their art to suggest balance and order. Artists show geometrical shapes in order to illustrate or emote the illusion of realism.

Geometry

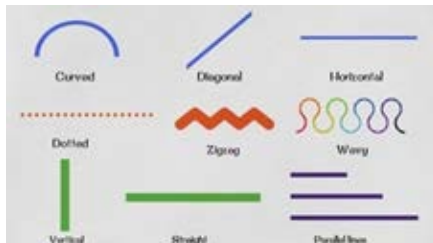
It is one of the main divisions of Mathematics which are concerned with the quantification of properties and association with points, lines, surfaces, and solids. It is also concerned with the sizes, shapes, positions, angles and dimensions. Geometric shapes are compact shapes produced using points, line segments, circles and curves. The whole world is comprised of the above compact shapes. Geometry is one of the easiest way to see the relations of mathematical concepts to dance. Dancers form shapes with their body, arms, and legs as they move while dancing. They form beautiful shapes of tessellations by moving all around the stage.

Need of the Study

Geometry, a branch of Mathematics is analyzed with the art of dance where they use many types of geometrical shape throughout the program Methods used: Critical Observation method to find out the geometrical patterns in baratanatyam and co-relative method to correlate that patterns with baratanatyam.

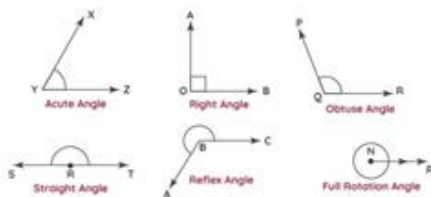
Lines in Geometry

A line is one dimensional figure which has length but no width extending infinitely in both directions. The different types of lines are Straight line, Curved line, horizontal line, Vertical line, Parallel line, Perpendicular line, Zigzag line, Wavy line, and Diagonal line.



Angles in Geometry

Two lines which shares a common endpoint is an Angle. Some of the types of Angles are Acute angle, Right angle, Obtuse angle, Straight angle, Reflex angle and Full Rotation angle.



Geometrical Shapes in Dance

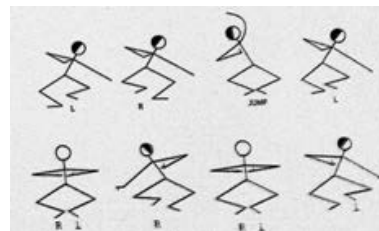
The compositional element of dance is shape or figure. It may be the physical posture of the dancer's body in single. In multiple dancers the designs are created by the dancers on the stage. A force can change the impact of dance at the same tempo. Shapes can be altered by using the space. Dance is the movement of the body in a rhythmic way through music with in a specific space. The purpose of dance is to express an idea or a theme. Dance is really all about the ways through music by which you can change the shape of your posture. The changing of shapes are to demonstrate an act, a feeling or an idea. In group dance choreography often includes geometric shapes like triangle, rectangle and circular shapes using their whole body or hands or legs. Geometric design is a division of statistical geometry which is concerned with the construction and depiction of many shapes.

Mathematics in Dance

Dance uses mathematics like Algebra, pattern of 2 D, 3D shapes which fit perfectly together without any gaps, repeated patterns, sequences and disparity. Dance uses numbers, counting beats in the form of jathis, rhythmic syllables like takita, tatikinatom, Intonation, syncopated time patterns and rhythmic structures. Dance use cardinal numbers 3, 4, 5, 7, 9 in between especially at the end of each parts of a song or item. (pallavi, anupallavi, charanam in the form of jathis)

Adavus and Shapes

Adavus in Baratanatyam: Adavus are basic foundations of Baratanatyam. They are the basic steps In adavus of Baratanatyam many lines like parallel line, perpendicular line, diagonal line curved line, zigzag line are depicted with body, arms and legs both in solo and group dance. Geometrical shapes like circle, semi-circle, rhombus, square, rectangle, are depicted in solo and group dance through body, arms, and legs.

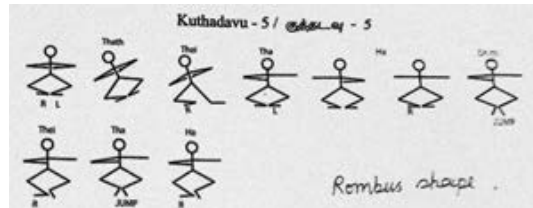


Thattadavu

If we consider our chest as the center point in Araimandi position which is maintained throughout Thattadavu we get four right angled triangles. The shape in between both the knees represent a rhombus shape.

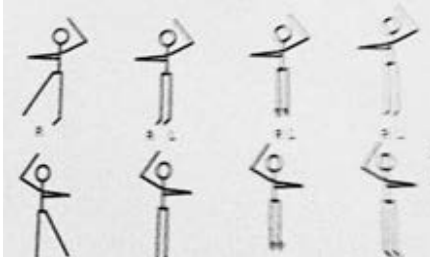
Nattadavu

Nattadavu involves the many movements of legs Here in this movements the basic triangle and many forms of lines in geometry like parallel line, perpendicular line and diagonal lines are identified.



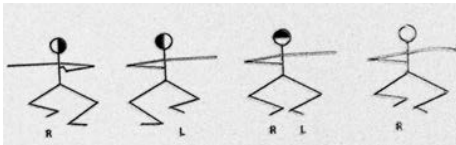
Mardita Adavu

This adavu forms a semicircular movements with the help of hands right side once and left side once. There is a swirl movement in this adavu where the dancer rotates in self – circular movement.



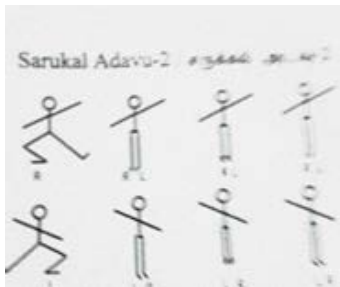
Guditthu Mettadavu

In this adavu we get four right angled triangles and two rhombus shapes and parallel lines.



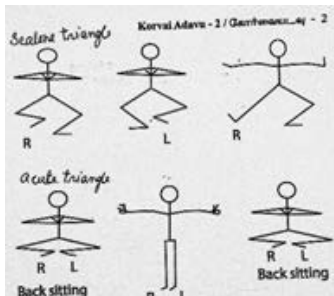
Sarukkal Adavu

Semicircular motions are done with the torso of the body on both sides and equatorial triangle and diagonal lines are formed.



Korvaiadavu

As it involves a sequences of steps which shows the formation of Triangle, perpendicular line, and diagonal line.



Thirmana Adavu

As it is the finishing sequence it forms a straight line on both sides.

Paidal Adavu

This adavu involves leaping and the dancer covers space with steps in all directions shows circular motion. While leaping Acute angle and parallel lines are formed.

**Geometrical Shapes in Dance
Geometrical in Solo Dance**



Geometrical in Group Dance





energy. Calmness is represented by the shape circle whereas anxiety and distress are represented by the shape square. Artists use geometrical shapes in their art to suggest balance and order. Artists show geometrical shapes in order to illustrate or emote the illusion of realism. Dance uses Mathematics through Algebra patterning, Tessellations, repeated patterns, sequences and disparity. Dance uses numbers, counting beats in the form of jathis, rhythmic syllables like takita, tatikinatom, Intonation, syncopated time patterns and rhythmic structures.

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Conclusion

Geometrical shapes activate our visual sense in a most relevant, convincing and sensible way rather an emotional way. They give an orderliness and tidiness to any kind of work. Geometrical shapes and lines incorporate a sense of uniformity and evenness which makes everyone to comprehend easily. Naturally Geometry imparts itself to a well-formulated state where each element fits with one another or within a specific order. There is something inherent, natural, relaxing about this geometrical shapes. The elements of dance are body, action, space, time and

Author Details

S. Subbulakshmi, Director, School of Music and Fine-Arts, Vels University (VISTAS), Chennai, Tamil Nadu, India, Email ID: director.music@velsuniv.ac.in, kavinthree@gmail.com