

Developing A Software for
'Trimmings and Decoration' and Studying
It's Effect on Preschool Girl's Garment.

By

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A THESIS SUBMITTED TO THE AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND
HIGHER EDUCATION FOR WOMEN - DEEMED UNIVERSITY, COIMBATORE - 641 043
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN FAMILY AND COMMUNITY SCIENCE

APRIL- 1998

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GIRL'S GARMENT**

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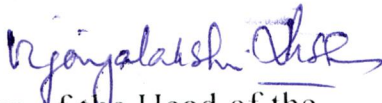
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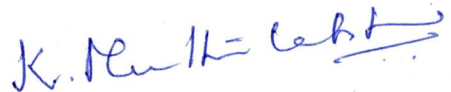
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
FAMILY AND COMMUNITY SCIENCE

APRIL 1998

Certified as Bonafide research work



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Department



Signature of the Guide

Acknowledgement

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Introduction

INTRODUCTION

The advent of the industrial revolution supplemented man's muscular power with machines and the appetite for accurate information in different fields of human endeavour grew by leaps and bounds. The birth of electronic computer has heralded the advent of augmentation of man's mental ability. Venkitachalam et al, (1995) express that with the arrival of computers, there has been a revolutionary change in the industrial sector, including the textile industry. Modern, sophisticated computerised machines have tremendously increased the speed, accuracy and reliability in production and creation of various products.

Srivastava (1990) opines that in the textile industry, with the introduction of new machineries and processes, with ever increasing demand for new aesthetic designs, the art of textile designing has become more challenging than ever before (Indian Textile Journal (1995)). With the dawn of textile technology, roles of creation of design, design engineering and also craftsmanship were formed.

The conversion of creative arts into textile fabrics was constrained by the lack of dynamic ability, flexibility in human nature, productivity and hence cost-effectiveness. Banerjee et al, (1995) state that with the advancement of computers and software, it is now possible to introduce versatility in textile design, along with suitable harmonisation, among creative arts and design engineering techniques. To keep pace with the diversity of modern

generation's demand, more flexible, dynamic and versatile techniques like COMPUTER AIDED TEXTILE DESIGN (CATD) has been developed.

COMPUTER-AIDED DESIGN programs, have been called the word processors of tomorrow for designers, says Gwendalyn (1990). With the development of computer graphics, the computer is now a medium that can replace the traditional pen and paper for creating art images, rather than hand-sketching garments and drafting paper patterns, more designers in industry are using the computer. Computer-aided-design systems are not designed to automate the design process itself, but rather to free the designer from some of the time consuming, repetitive tasks, leaving more time for greater design achievement. One of the advantages of a CAD system is that any repeated element automatically can be recalled for use in current or in future drawings. Elements can be recalled, duplicated and modified quickly. Computers do not replace the creative mind of the designer, but rather are a tool to make the production of design ideas easier infact to enhance creativity itself.

All computer aided designing and manufacture packages claim to make higher quality products, at less cost, despite a shortage of trained technicians. COMPUTER AIDED DEISGN is said to encourage creativity, allowing users to do more with limited time says Sastry (1996).

"One's philosophy of clothing is largely an expression of one's philosophy of life".

Clothing is one of the basic needs of life and is found to express the most suitable and acceptable medium of expression of art. Thus modern technique aims at simulation of conceived design on to the monitor and thus helps in better visualisation of a wide spectrum of textile designs.

Garg et al, (1984) and Gupta et al, (1984) opine that 'art' means the application of skill and taste to the production of beautiful things. Rajar and Bhalla (1988) state that the art of dressing smartly is not necessarily wearing the latest style but wearing the most becoming style, with Proper TRIMMING and DECORATIVE detail which helps to obtain a quality look.

Soundaraj (1974) and Mullick (1981) point out that a design is defined as any orderly arrangement of lines, forms, colours and texture creating beauty. The techniques adopted to enhance the visual appeal of the fabric have been trimming and decoration. The trim and detail of the dress are often the focal points of the whole design.

The pre-school period from three to five years of age is a delightful period of enthusiasm, energy, activity and creativity. Good taste in clothing is developed by providing items of apparel that suit the child, in style, design and colour. The children's outfit should be simple, comfortable to move about freely, and at the same time be colourful, and enhance their aesthetic feeling. So variety should be introduced in their garments through difference in style, design, colour and texture. No attempt was made till recently to develop a catalogue on 'Trimming and Decoration'

in the field of fashion designing. Considering the above factors the investigator has made a start to create a catalogue on 'Trimmings and Decoration'.

Considering the above factors the investigator has planned a study with the following objectives:

1. Development of a software for a catalogue on 'Trimmings and Decoration'
 - To find the effectiveness of the developed catalogue.

2. Creation and Application of designs and colours on pre-school girl's garment.
 - To elicit the mothers preference regarding their pre-school girl's garment
 - To create designs with colours for pre-school girls based on the mothers preference
 - To apply the created designs with colours on pre-school girl's garment
 - To find the effectiveness of the created designs with colours on the garment

Review of Literature

II REVIEW OF LITERATURE

The review of the study included the following headings:

1. Computer
 - 1.1 What is a computer?
 - 1.2 Components of a computer
 - 1.3 Capabilities of a computer
 - 1.4 Computer aided designing (CAD) - Graphics
 - 1.5 Computer aided design in apparel design and manufacturing
2. Trimmings and decoration
 - 2.1 Importance of garment designing
 - 2.2 Elements of design and their application in costume designing
 - 2.3 Principles of design and their application in costume designing
 - 2.4 Classification of design

1. Computer

1.1 What is a computer

Agar (1996) and Paxton (1986) are of the opinion that the word computer may be used for any device that may be employed to compute or calculate data which operates on to reshape them into a more useful form.

Gosling (1995), Gupta (1997) and Information Technology (1996) quote that computer is a high speed, automatic, electronic, digital, general purpose, stored programme and data processing machine.

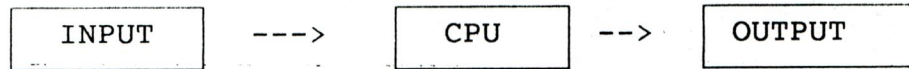
1.2 Components of a computer

1.2.1 Hardware

Hunt and Shelley (1990) opine that the computer

hardware comprises of all the physical components, modules and peripherals such as circuits, key boards, bolts and nuts. The list of hardware are the following.

HARDWARE COMPUTER



1.2.1.1 Input devices

French (1985) says that these devices translate data from human understandable form into electronic impulses which are understood only by the computer, for eg. punched cards, secondary storages, key board, mouse and monitor.

1.2.1.2. The Central Processing Unit- CPU

It is the heart of the computer. The central processing unit is miniaturised into a single chip of silicon (5x5x0.4 mm) termed as microprocessor. A computer built using a microprocessor is called a microcomputer says Sundaresan and Jaya Chandran (1990).

The central processing unit consists of the following sub units. They are

Arithmetic Logic Unit - ALU

It is like fore brain which performs the higher mental functions like calculations and logical reasoning by Rajaraman and Rajaraman (1990). Thiagarajan (1986) is of the opinion that this unit gathers information stores it and uses it when necessary.

Control unit

Control unit is like the rear part of the brain which controls the main automatic functions. Control unit

co-ordinates the activities of the various elements of the computer and decodes the instructions given by the users. It determines the sequence of the various instructions and sends out commands and control signals to other parts (Groover and Zimmers (1984)).

Memory Unit (MU)

Memory unit holds the data, instructions, intermediate results and final results. It is also called as storage unit. Successful functioning of any computer is based upon the amount of information it can hold in its memory.

1.2.1.3. Output devices

Narang (1987) says that out put is a term applied to the transfer of information from a control processing unit to an output device. Malvino and Leach (1988) give some examples for output devices as monitors, secondary storages and printers.

1.2.2 Software

Spences (1986) refers to software as a set of statements which are submitted to some computer system and are used to direct the behaviour of the system. Software is a driving force behind innovations in both software and hardware as well as the resulting applications of computing (Computer Society of India, 1991).

System software

System software controls all processing activities and makes sure that the resources and the powers of the computer are used in a most efficient manner.

Application software

Narang (1987) says that application software comprise of those programs which direct the computer to perform specific jobs requested by a user like printing out a sequence of data, updating transactions, payroll packages and research application package.

1.2.3 Live ware : Personal involved in computer field

1.3 Capabilities of a computer

- * Computers are very fast. They can process millions of instructions per second.
- * Computers are very accurate
- * Computers can perform very complicated and repetitive tasks
- * Computers can do a variety of jobs, example, they are very versatile
- * Computers can handle complex arithmetic operations

Ramaswamy (1994) says that computer does not know what functions have to be done on the data. According to Narton (1995) programmes are the fuel which adds life to the computer. Data is processed in the following steps.

Preparation of source documents: Programs are written depending on the type of job that the computer is expected to do.

Input data: The instructions and data of the program are fed into the computer through the input unit and stored in the memory unit.

Manipulation of data: Arithmetic, logic and memory unit team up to manipulate data.

Output of information: The result of a program are obtained on the output units.

Storage: The output is stored on secondary memory Agar, (1995).

1.4 Computer Aided Designing - CAD (Graphics)

Hunt and Shelley (1990), Omura (1988) and French (1985) are of the opinion that graphics involves some special input/output device to perform the required functions, besides the usual hardware. Some of the graphical input devices are mouse, joystick, track ball, light pen, digitizers, key board and all types of secondary storages. The graphical output devices are visual display unit, liquid crystal display, dot matrix printers, plotters, slide makers and secondary storages.

Roy et al (1996) view it as the application of technology to the design of a product or the design itself. Indian Textile Journal (1996) and Asian Textile Journal (1997) computer aided designing finds its applications in computer aided manufacturing, business, graphics, games and paint programmes. Apart from exact dimensions, the aesthetic values to be added to a design are very well communicated only by a graphic representation.

Ramaswamy (1994) expresses that graphics has spurred hardware development. Graphics is the use of computers to create and manipulate pictures on a display device. It comprises of software techniques to define, store, manipulate, interrogate and present pictorial output.

Ezzell (1996) strongly believes that graphics are the only reasonable solution to application requirements. Roy (1996) opines that graphics is at the centre stage of the

technology development. Graphics is even invading the realm of mainstream business infotech which is a very impressive feat.

Disadvantages of manual designing

Agor (1996) states that

- * Designing can be done only by skilled artists and draftsmen
- * Modifications are difficult
- * Making good quality copies is sometimes very very difficult

For the above reasons manual designing is usually not preferred, instead computer aided designing - CAD is the most preferred

Advantages of computer aided designing - CAD

Sundresan and Jaya Chandran (1987) and Sastry (1996), Book of Papers (1996)

- * It enables one to create drawings faster than hand drafting methods with the features of easy duplication and editing
- * With the zooming features the smallest detail of the drawing can be magnified and worked with accuracy with the help of computer aided designing's, built in measuring capabilities.
- * These are customization features that enable one to automate respective tasks, rotation, mirror images, enlarging and minimising
- * CAD software have been touched as a way to shorten design cycles
- * It is said to encourage creativity, allowing users to do more with limited time.
- * CAD systems have enabled designers to conceptualize and create precise as well as intricate designs both on the monitor as well as print outs

1.5. Computer aided design in Apparel Designing and manufacturing

Bonnie et al (1991), Gwendalyn et al (1990) and Sheldon (1988) are of the opinion that "Computers are a tool to make the production of design ideas easier". Apparel design concepts that can be worked on the microcomputers include

- * Fashion illustration,
- * Fabrication of garments in different colours and patterns
- * Pattern drafting
- * Pattern grading and
- * Marker making

Textile India Progress (1997) and Lokhande (1996) speak about computerised automation cutting system called invescut, which is used to match and cut plaid and striped fabrics which is done with the help of a camera. Another system called procon II manager monitors all the activities in a sewing room. Weston (1988) and Frases (1987) quote that the global fashion industry is undergoing total automation in each and every area of manufacturing warehousing and distribution with computerised pattern making, grading, marker making, costing, spreading, cutting and sewing with unit production system.

2. Trimmings and decoration

2.1 Importance of garment designing

Bonnil et al, (1991) opine that clothing is one of the basic needs of life and is found to be the most suitable and acceptable medium of expression of art. Jainie and Purdy

(1987) express that the art of dressing smartly is not necessarily wearing the latest style but wearing the style that is most becoming. Proper TRIMMING and DECORATIVE detail help to obtain a quality look.

According to Edna Bryte Bishop (1994) trimming is the form of contrast of design, colour and texture, applied to the surface or edges of the garment, whereas decoration is the surface enrichment of a garment after the completion of garment construction. Soundaraj (1974) and Mullick (1981) point out that a design is defined as any orderly arrangement of lines, forms, colours and textures creating beauty. The trim and detail of the dress are often the focal points of the whole design.

2.2 Elements of design and their application in costume designing

According to Van De Bogart (1988) the elements of design such as colour, line, shape or form and texture can create a pleasing interesting design.

2.2.1 Form- Shape - Space

Form is a three dimensional object and the human body is an example of form. Shape refers to the outside dimensions of contours of an object. Space is the background area found between shapes. quotes Grover (1981)

2.2.2 Lines

Lines create visual impressions lines can be used in a garment to make one look taller, shorter, heavier or thinner. There are two kinds of lines straight lines and curved lines

-Straight lines: Straight line can take three directions vertical, horizontal and diagonal.

-Vertical lines: Vertical lines generally add height or length to the body and make it appears more narrow. Pointed collars, sleeveless garments, single vertical placement of trims and buttons.

Horizontal lines: Horizontal lines generally add width or breadth and shorten the body. The areas in which these lines appear --- fabric fullness, fabric designs with horizontal movement, contrasting collars, and cuffs.

Diagonal lines The degree of slant determines the illusion created. Diagonal lines generally result in informal balance balance and zig zag lines forces the eye to shift direction abruptly in jerkey movement.

-Curved lines: A restrained curve is gracefulland gentle. Curved lines are found in the areas such as fabric designs, necklines, sleeves, yokes, lapels, trims, scallops etc.

2.2.3 Texture

Texture refers to the surface appearance of the fabric, plus the feel of it (Dora, 1960). Basically textures are classified into three groups.

-Rough, harsh, dull, durable - looking

-Medium, soft, dull

-Fine, smooth, sheer, shiny.

2.2.4 Colour

Prem Lata (1981) opines that the appeal of colour is universal and one of our greatest enjoyment is the ability to use it beautifully. Response to colour is immediate, and

lasting. Because colour is one of the least expensive factors to change in the production of clothing, the garment industry frequently changes colour before changing style.

Classes of colour:

Colour may be divided into five classes.

Primary colours: All colours may be obtained by mixing in various proportions of three fundamental hues - Red, yellow, blue, called the primary colours.

Secondary colours or binary colours: When two primary colours are mixed in equal amounts a different hue will result called a binary or secondary colour. They are green, orange, purple. The primary and binary colours are called the six standard colours.

Intermediate colours: When a primary and a neighbouring binary are mixed an intermediate hue is obtained. The six intermediate colours are yellow green (YG), Blue green (BG), Blue purple (BP) Red Purple (RP), Red Orange (RO), Yellow Orange (YO). These are the twelve colours which constitute the outer circle of the colour chart.

Tertiary colour: When two binary colours are mixed a tertiary colour results, they are yellow, blue and red, much neutralised. Tertiary resembles a smoky yellow, blue is known as slate blue and red as old brick-red.

Quaternary colours When two tertiary colours are mixed in equal proportions give a quaternary colour. They are green, purple and orange much neutralized. They are sometimes spoken of as alive, prune and buff.

Colour harmony

There are two standard colour harmonies

-Related colour harmony

One hue colour harmony: The neutrals black, white and grey may be used in any harmony. In matching colours for a one hue harmony, be very sure that you are getting the exact hue, a greenish blue is displeasing with purplish blue.

Analogous harmony: When colours are used which lie next to or near each other on the colour chart they form analogous harmony. example : yellow and blue such combination as green and blue green

-Contrasting colour harmonies:

Direct complementary: When colours directly opposite to each other in the colour circle are used they form direct complementary colours. eg: yellow and purple, blue and orange, red and green etc. Complementary scheme may be most pleasing.

Double complementary: Two directly adjacent colours and their complements used together to form double complementary colours. eg: Purple and red with yellow and yellow green, red and red orange with green and blue green

Split complementary: Combination of a primary or an intermediate colour with colours on either side of its complement to form split complementary colours. eg: Yellow with red purple and blue purple (or) yellow orange with blue and purple

-Triad: On the colour chart equalateral triangle creates four triads they are the - primary triad made of the three primary colours (red, blue and yellow)

Intermediate triads :

(yellow orange, blue green and red purple)

(yellow green, blue purple and red orange)

2.3 Principles of design and their application in costume designing

Van De Bogart (1988) art is concerned with the organization of the basic elements line, form or space, colour and texture. In order to arrange these elements well, we need to apply principles of unity, emphasis, balance, proportion and rhythm to achieve some variety or interest.

2.3.1 Balance

Balance implies ease, equilibrium, steadiness and security. Balance may be defined as equal distribution of weight (actual or visual) from a central point. When the design elements line, form, shape space, colour and texture are in balance, a well balanced dress is balanced from top to bottom as well as across. These are several kinds of balance says Mary Jacob (1996).

Formal balance: Formal balance occurs when identical objects are equidistant from a centre (real or imaginary) and the objects appear to equalize each other. In dress design, the feeling of dignity or formality created by formal balance is also influenced by colour, texture and cut.

Informal balance: Informal balance occurs when objects are arranged on either side of a centre (real or imaginary) are equal in weight or mass but not identical. For example a

kameez with embroidery done asymmetrically from neck to hemline is informally balanced.

Radial balance: Radial balance occurs when the major parts of the design radiate from a central point. Pleats, seams, gathers, darts, radiate from the focal point creating sunburst effect.

Vertical and horizontal balance: Vertical and horizontal balance may be either formal or informal. Vertical balance is achieved on either side of an imaginary line that bisects the body.

2.3.2 Proportion

Proportion may be defined as the pleasing relationship of areas. Proportion is the design principle concerned with the relation of the size of the parts to the whole and to each other. Proportion is referred to as scale. Proportion includes the relationship of height, width, depth and the surrounding space of each design. The golden mean equations are used to produce garments that may be divided visually into 3:5, 5:8, 8:13 horizontal sections.

Proportion of texture

Surface interest or textures refers to nap, pile, slubs, plisse, flocking and other textile treatments that give dimensions. Pleasing proportion is achieved when the texture of the clothing support the garment design.

Proportion of fabric design: This considers the dimensions of the individual designs, their position in both fabric and garment.

Proportion of colour It involves using colour in unequal amounts, when several colours are used together, one colour should dominate

2.3.3 Emphasis

Emphasis is dominance or concentration of interest in one area of a design that prevails as the centre of attention and is more eye arresting than any other part. This implies the use of subordination in other parts, so that some areas may be emphasized. Emphasis at the personality may be achieved by colour and texture contrasts, necklines, collars, etc. The methods used to obtain emphasis are:

- Repetition or concentration
- Unusual lines or shapes, textures
- Decoration on a contrasting background
- Contrast or opposition
- Progression

2.3.4. Rhythm:

Rhythm may be defined as a pleasing sense of organized movement that gives continuity to a design. Rhythm leads the eye in a fluid movement throughout the design. Without rhythm, a design may appear spotty or disconnected. Mary Jacob (1996) classifies rhythm as follows

Fluid rhythm: The harmony related to curves and falls that lead the eye effortlessly throughout the entire costume. The sari is a typical example which is entirely uncut and skillfully drapes around the body.

Staccato rhythm: Varied repetition, rhythm by repetition or regular repeats of motifs, shapes, buttons, tucks, pleats,

trims enrichments, colour texture, fabric design, etc.

Rhythm by progression or gradation: It is an orderly sequence of gradually increasing or decreasing change in size of motif, buttons, trims, ruffles, enrichments, colour, values, intensity or shading from one colour to another, texture and fabric design.

Rhythm by radiation: Rhythm by radiation organized movement emanating from a central point by utilizing gathers, panels, folds, tucks, darts, pleats and lines etc.

2.3.5 Unity

Unity is also called as harmony, when the fundamental elements, line, shape, colour and texture have been used to express a single concept at theme, unity is achieved. Unity is created when all parts of the design are related, consistent and orderly.

2.4 Classification of design

Sundaraj (1973) and Mullick (1981) define design as any arrangement of lines, forms colours and textures. A good design shows an orderly arrangement of the materials used and in addition creates beauty in the finished product (The World Book Encyclopaedia, 1989). Design is classified into two major groups

2.4.1 Structural (or) constructive design

Structural design is a design made by size, form, colour and texture of an object. A criterion closely related to structural design is functionalism. Design which concentrates on function is known as functional design. Jimsey (1973) opines that, in textiles structural design is

inherent in all garment because they are created by construction details.

Example : Collars, cuffs, sleeves, puff flare, gathers, necklines etc.

Requirements of a good structural design

- * In addition to being beautiful, it should be suited to its purpose
- * It should be simple
- * It should be well proportioned
- * It should be suited to the material of which it is made

In short structural design must fulfill the quality

"form follows function"

2.4.2 Decorative or applied design

Decorative design is the surface enrichment of a structural design says Marjary (1982). Any line, colour or material that had been applied to a structural design for the purpose of adding richer quality.

examples: Trims such as sequince, beading, applique, embroidery, rick rack, piping, fancy buttons, etc.

Requirements of a good decorative design

- * It should be done in moderation
- * It should be placed at the structural points and strengthen the shape of the part. "It should grow out of the structure"
- * It should have enough background space to give the effect of simplicity and dignity to the design.
- * Decorative pattern should cover the surface quitely.
- * The background spaces should be as carefully studied and as beautiful as the patterns placed against them

The decorative design can be expressed in three ways:

Geometric design

Mabel Erawin, (1970) when the designs like line, square, circles, semicircle, are adopted to suit the garment, the design ceases to be a geometric design as they have all the geometric properties. eg: Squares, circles, semicircle.

Conventional design

When a design from nature is adopted with certain modification to suit the purpose of the garment, the design ceases to be conventionalized.

Abstract design

Designs which do not have nature as their source but combination of lines, strips etc are classified as abstract. eg: Plaids, dots.

Experimental Procedure

III EXPERIMENTAL PROCEDURE

The experimental procedure consists of four major aspects.

1. Development of software for a catalogue on 'Trimmings and Decoration'
2. Application of selected designs and colours on pre-school girls' garment based on mothers preference using computer
3. Combining the of software catalogue on 'Trimmings and Decoration' with the created frock patterns
4. Evaluation of the developed software

1. Development of software for a catalogue on 'Trimmings and Decoration'

- 1.1. Collection and grouping of terminologies with pictures related to trimmings and decoration
- 1.2. Selection of the operating system
- 1.3. Selection of the programming language
- 1.4. Selection of the hardware configuration
- 1.5. Developing the software

1.1. Collection and grouping of terminologies with pictures related to trimmings and decoration

According to Edna Bryte Bishop (1994) and Raushi Deshpande (1988) Trimming is a form of contrasts in design, colour and texture, applied on the surface or edge of the garment, whereas decoration is the surface enrichment after the completion of garment construction.

The investigator collected terminologies related to Trimmings and Decoration from number of books, magazines, dictionaries and encyclopaedia's. They were arranged in alphabetic order from 'A' to 'Z'. Terms starting with

similar alphabet were grouped under one category. To get a complete sequential order and to access for easy location of desired terms, each and every terminology was defined in its own manner. In order to make the catalogue more effective, attractive and eye-catching, the investigator collected suitable pictures, which represents appropriate meaning of the terms.

1.2. Selection of the operating system

Thiagarajan (1986) says an operating system is a supervisor and monitor executive, which is a set of routines written to manage the running of the computer.

Windows is a class of software called as graphical user interface (GUI) expresses Cowert (1995). With the advent of Windows many tasks such as programming, opening files and choosing commands which were cryptically done with key board, can now be done using a graphical approach that is much more intuitively obvious to people who are new to computers. The graphical interface helps to create visually appealing applications. More than 600 function calls in the Windows library. Pull-down menu, consistent control facility makes Window's application easy to work. The features like clipboard, dynamic data exchange, object linking and embedding help to create fancy compound documents combining informations from several different applications.

1.3. Selection of the programming language

Harowitz (1984) and Thiagarajan (1986) refer to

programming language as a set of commands used to describe a solution for a problem in a way the computer can understand and execute.

Microsoft Visual Basic (1995), Michelle and Fernandey (1996) opine that

- * Visual Basic is the quickest and easiest way to create powerful applications for Microsoft, Windows operating systems.
- * It allows to create robust and can make use of graphical user interface (GUI).
- * It provides appropriate tools for the different aspects of graphical user interface
- * It is used to create the graphical user interface for the application by drawing objects like 'text boxes' and 'command buttons' on a form in a graphical way.
- * Properties can be set on these objects to refine their appearance and behaviour like colour and size.
- * Interface can be made to react to the user by writing code that responds to events that occur in the interface.

It short Visual Basic is used to create powerful featured applications. Considering the above features the investigator selected Visual Basic.4 as the programming language.

1.4. Selection of hardware configuration

Pentium (586) 100 Megahertz/630 hard disk drive (HDD) with 16 megabyte RAM was selected because windows is a 16 bit operating system and requires 8 megabytes of memory which works very slowly on a 486 hard disk and Visual Basic.4.0 requires 16 megabytes of memary to work with and is a 16 bit development system. One mouse, a 101 key board,

two serial parts, one parallel part, 1.44 floppy drive were the other hardware selected. A Super virtual graphics adapters (SUGA) colour monitor was selected because it can give 16,777, 216 different shades of colours. The resolution of the visual display unit was selected as 640/480 for the clarity of the pictures on the monitor.

1.5 Developing the software catalogue

Thiagarajan (1986) defines software as a means of computer programme, like operating system, language utilities or user applications, it is a tool with which applications are developed and implemented. Software development means given a problem, find a program, or a set of programs, that efficiently solves the problem. Paxton (1986) quotes that programmes are usually written in high level language which allows the commands to be written in English. Such commands are not directly intelligible to the computer and have to be translated to low level machine instructions.

Narang (1989) refers programs to a programme sequence of instructions which are given to the computer to carryout specific functions and tasks. Using the related operating system and the programming language a programme was developed.

The collected pictures related to different terminologies, were scanned in original colour and size, and were stored in individual files as bitmaps. The scanned pictures were edited using crop and cut technique and the pictures were enlarged or minimized using the zooming technique where ever necessary.

One form was created for each alphabet, thus totally twenty-six forms were evolved. Considering the convenience of the user, the investigator created the following controls for all the twenty-six forms.

A combo-box was opted to list down the terminologies and captioned as 'Terms'. A label-box and a picture-box were created to display the respective meanings and its related pictures, by click the desired term from the combo-box. Five command buttons have been created and were captioned as Search, Goto, Previous, Next and Exit for the following purpose.

Search - to search for the desired terminology. This has been programmed in such a way that if the user clicks the 'Search' button, an input box appears which will request the user to type the term to be searched, provided the term should start with the alphabet related to that form. If the term is available an input box with 'OK' command appears and by clicking it the meanings, with the related picture appears. If the typed word is not found in the form related to that alphabet, immediately an input box saying 'the word not found' appears..

Goto - to go to the desired alphabet. A text-box was created and captioned as 'Go to' which is made visible only when the Go to command button was clicked. This helps the user to skip on to the desired alphabet, when it was typed in the text-box.

Previous - to go to the form before

Next - to go to the form after

Exit - to reach the main form

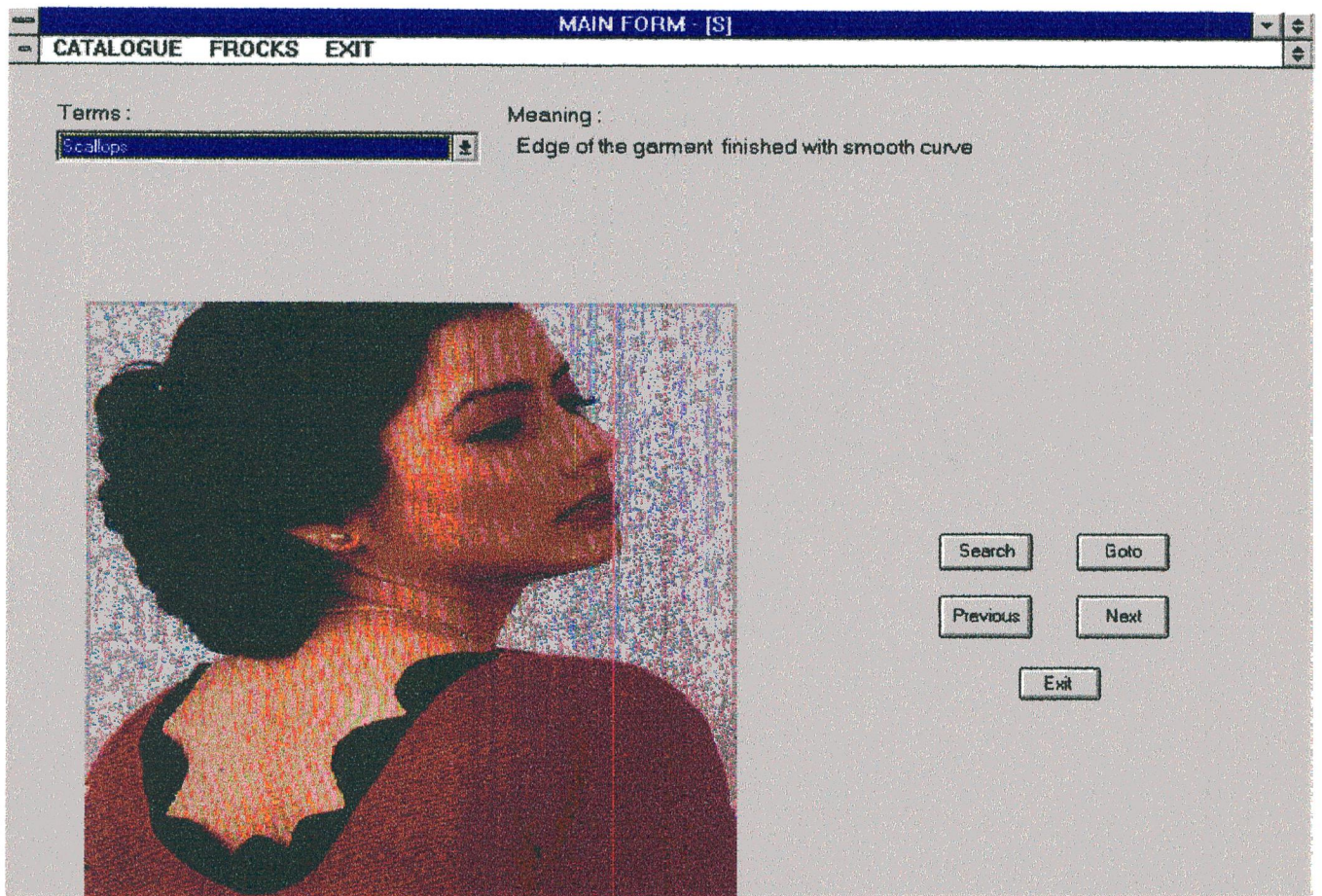


Figure 1

Form design of the catalogue on `Trimmings and
 Decoration

- Term - Scallops
- Meaning - Edge of the garment finished with
 smooth curves
- Search - To search for the desired term
- Go to - To go to the desired alphabet
- Previous- To go to the form before
- Next - To go to the farm after
- Exit - To reache the manin form

T-Traid
 (Yellow green, blue and red orange)

All the above controls were programmed at the click event. A sample for the form design, of the catalogue is given in Figure-1. The programme or the source code for the main and form 1 (alphabet 'A') is presented in Appendix VII. Programme writtern for the other forms (from 'B to Z' are just the same as form 1. other than their respective terminologies and meanings.

2. Application of selected designs and colours on pre-school girl's garment based on mothers preference using computer

Survey refers to the method of securing information from selected number of respondents of the concerned universe. Therefore the investigator conducted a survey to find out the mothers opinion regarding their choice of dresses for pre-school girls.

2.1. Assessing the mothers preference regarding their choice of dresses for pre-school girls

2.1.1. Selection of the sample

2.1.2. Selection of the tool

2.1.3. Framing the interview schedule

2.1.4. Conducting the interview

2.1.5. Consolidation and analysis of the data

2.2. Standardization of the 'A'-line frock pattern, designs and colours

2.3. Creation and application of selected designs and colours on the 'A'-line frock patterns using computers

2.1. Assessing the mothers preferences regarding their choice of dresses for pre-school girls

2.1.1. Selection of the sample

The sample was selected by stratified random sampling. In this procedure, strata on the basis of a

variable chosen by the researcher such as gender, age, level of education says Mc Millan and Schumaker (1989). On this basis, the investigator collected information regarding the choice of dresses from 100 selected mothers of pre-school girls aged between three to five years.

2.1.2. Selection of the tool

According to Kothari (1993) and Gupta (1986) interview schedule gives correct and first hand information. Goode and Hatt (1981) quote that interviewing is fundamentally a process of social interaction. It is a method of data collection through verbal interaction, between the respondent and interviewer. For these reasons, direct personal interview was selected by the investigator for conducting the study.

2.1.3. Framing the interview schedule

Gupta (1990) opines that interview schedule consists of a number of questions in a definite order. Gupta (1986) says that the investigator can personally visit the samples and collect the required information and is considered as firsthand information. With this in view the investigator framed an interview schedule to collect information regarding the mothers preference towards their pre-school girl's garment. The framed interview schedule is given in Appendix I.

2.1.4. Conducting the interview

Kothari (1990) and Kothari (1993) express that conducting the survey is very important, which when done along correct lines and at correct time will yield dependable

data. Thus the investigator visited the mothers according to their convenience and collected the required information for the study.

2.1.5. Consolidation and analysis of the data

Saravanavel (1989) states that collection of data is followed by arrangement for processing and analysis of data. Sindhu (1984) says that analysis of data involves breaking down of existing complex factors into simpler parts in new arrangements for interpretation. Keeping the above views in mind the investigator consolidated the collected data and analysed systematically.

It was found that 'A'-line frock with geometric, conventional and abstract designs were most preferred by the selected mothers for their pre-school girls. Majority of them preferred yoke part, neckline and hemlines, neckline to hemline and all-over pattern as the areas for design placement, in the frock. Regarding colour, complementary colour harmonies were the most preferred by the mothers for their pre-school girls. Details are given under the chapter 'Results and Discussion'

2.2. Standardisation of the 'A'-line frock pattern, designs and colours

For easy manipulation of the pattern (Zarapkar 1995) on the monitor a standardised 'A'-line frock pattern was reduced to 1/8th scale and was taken as the standard pattern for the study. The 'A'-line frock pattern reduced to 1/8th scale is given in figure 2. A simple attractive geometric, conventional and abstract designs were created

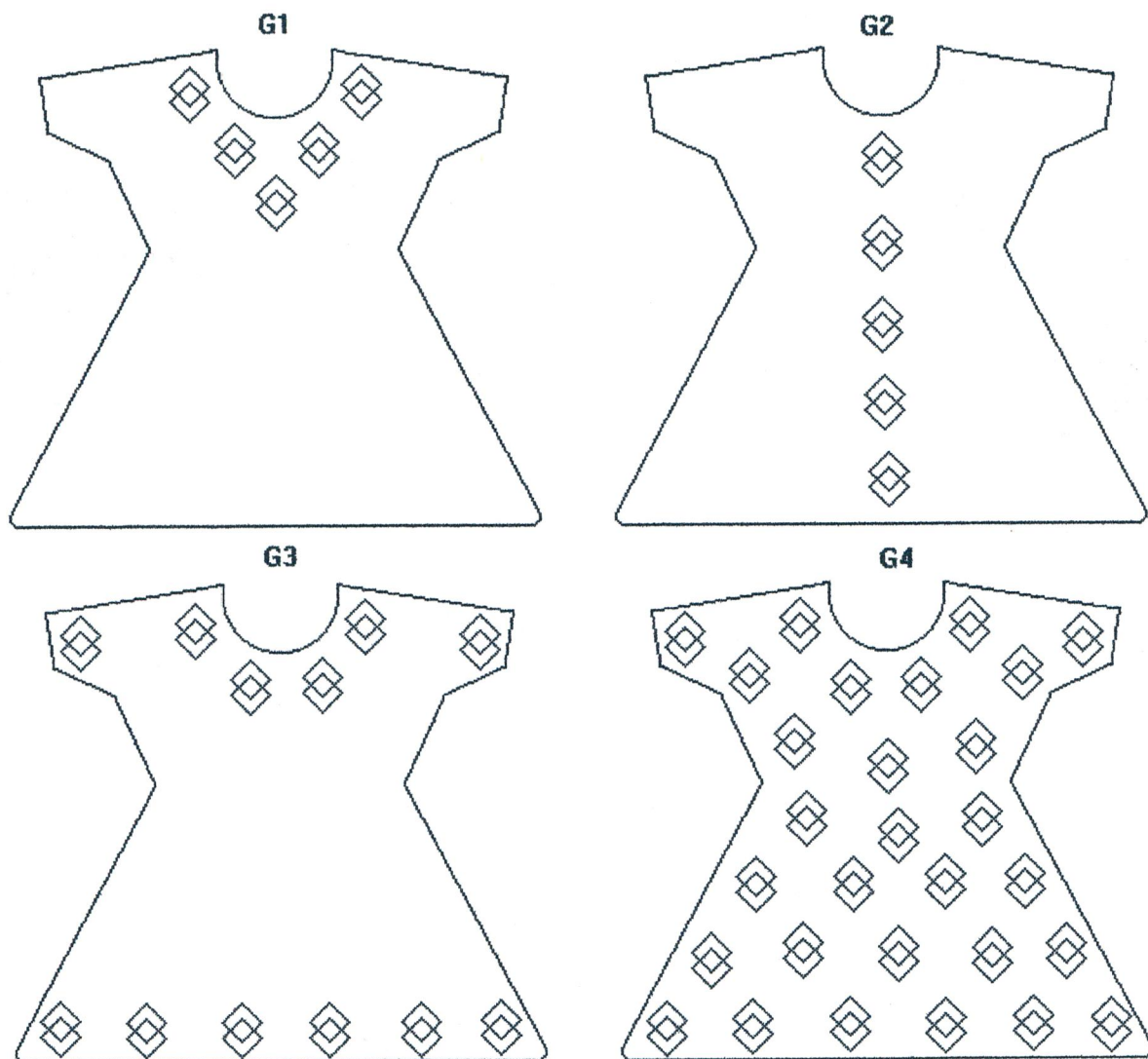
using zoom-in and zoom-out technique proportionately to suit the reduced size of the 'A'-line frock pattern. The created designs are given in figure 3. Placements of geometric, conventional and abstract designs on the 'A'-line frock patterns are given in figures 4,5 and 6. Based on contrast colour harmonies were selected for the study as on the mothers preference for their pre-school girls dress. The colours used on various designs are given in Appendix II.

According to Prang colour theory red, blue and yellow are considered as the primary colours and with various proportions of these colours give a multitude of different colours. Scott and Potts (1995) quotes that the Video Display Adopter in computer is capable of emitting only red, green and blue, instead of red, blue and yellow as primary colours. Each primary colour's intensity may vary according to integer scale of 'zero' through '255'. When the RGB values are set to zero, the pixels appears black and by setting the values to 255 the pixels appears white. The total number of RGB components are capable of emitting 16,777, 216 colours.

Considering the above factor, the investigator created the desired colours by varying the RGB values, in the option 'Edit colour' in Paint Brush Software package. The RGB values used by the investigator to create the desired colours are given in Appendix III and the colours created are given in the form of colour chart in figure 7.

FIGURE - 4

PLACEMENTS OF GEOMETRIC DESIGN IN A-LINE FROCK

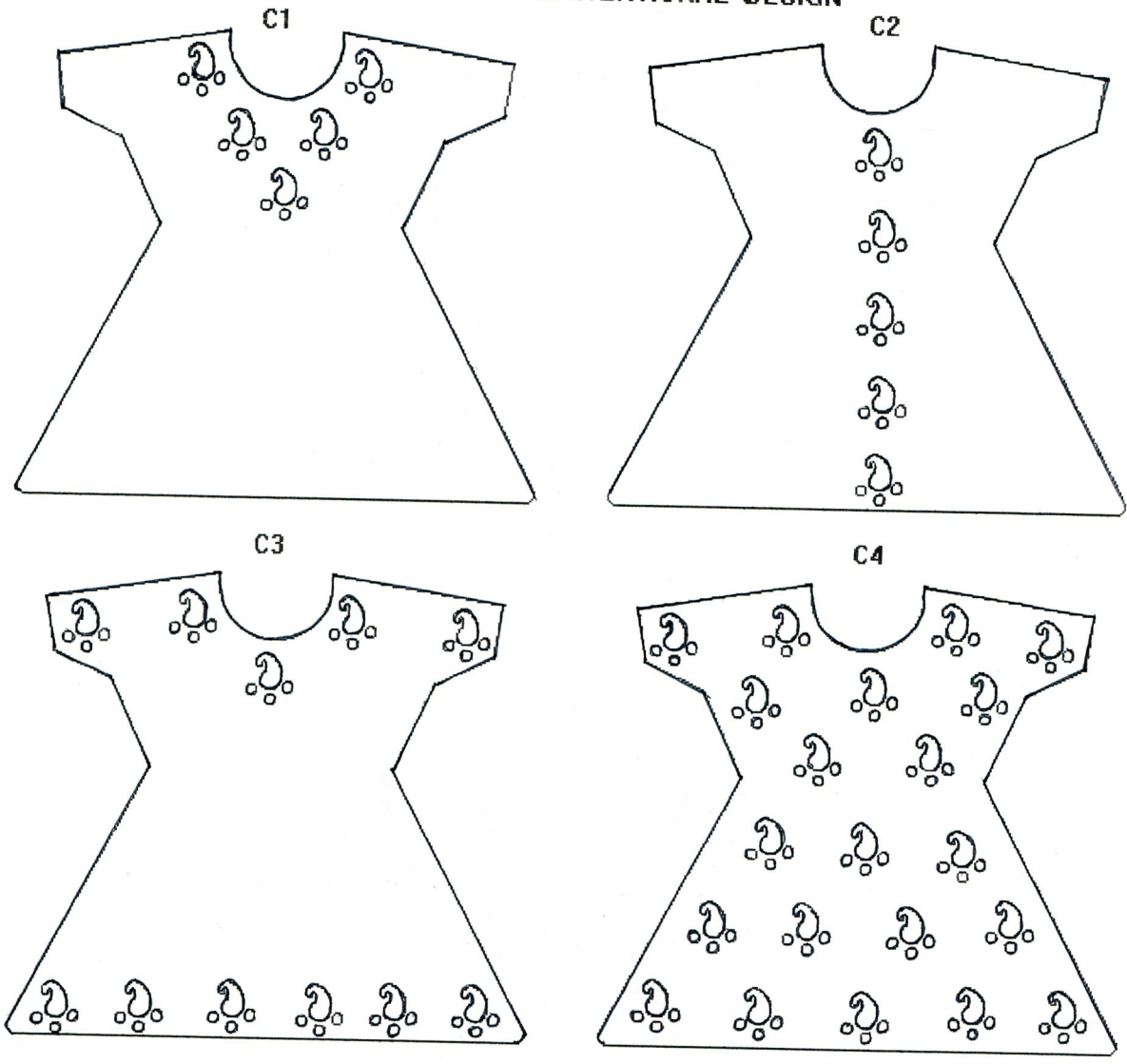


Placements of Geometric Design

- G1 - Yoke part
- G2 - Neckline to hemline
- G3 - Neckline and hemlines
- G4 - All-over

FIGURE - 5

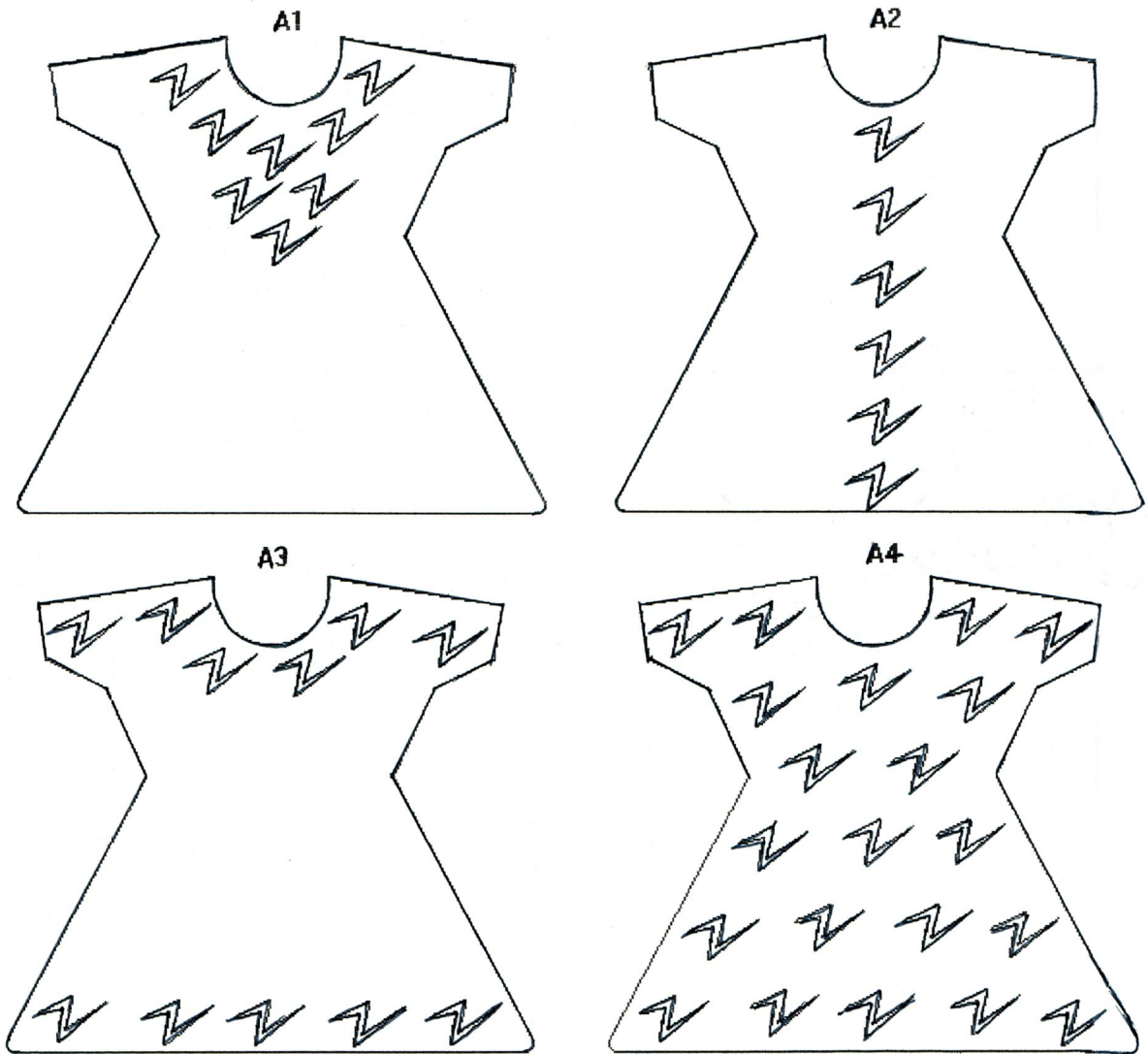
PLACEMENTS OF CONVENTIONAL DESIGN



Placement of Conventional Design

- C1- Yoke part
- C2- Neckline to hemline
- C3- Neckline and hemlines
- C4- All-over

PLACEMENTS OF ABSTRACT DESIGN IN A-LINE FROCK

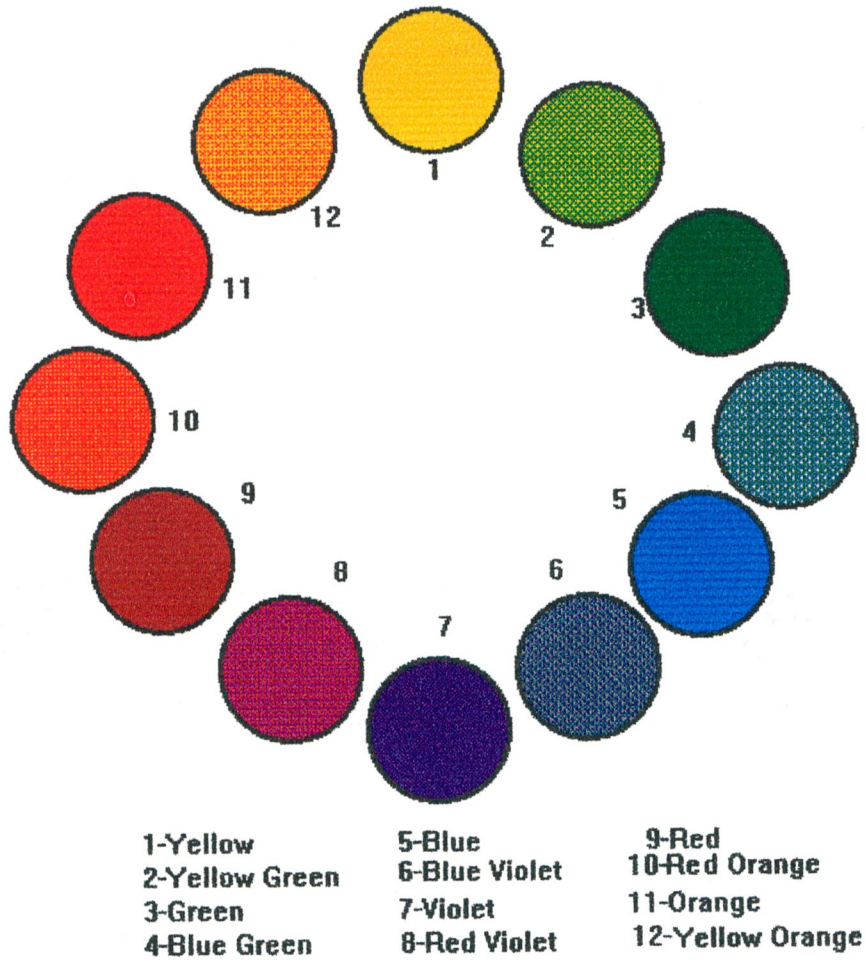


Placements of Abstract Design

- A1 - Yoke part
- A2 - Neckline to hemline
- A3 - Neckline and hemlines
- A4 - All-over

FIGURE 7

Colours Created Using Computers



2.3. Creation and application of the selected designs and Colours on 'A'-line frock pattern using computers

The reduced standard 'A'-line frock pattern was scanned using a scanner in its original size and stored as bitmaps. The scanned frock pattern was copied as many times as desired using the copy and paste technique. Proportionately created designs were placed on its respective placements in the 'A'-line frock patterns by means of copy and paste technique. Using the 'fill colour' tool, the desired colour was selected from the created colour palette. The frock patterns with its respective designs were coloured. Sample printouts of the created 'A'-line frock patterns are given in plates 1 to 3.

3. Combining a the software catalogue on 'Trimmings and Decoration with the created frock patterns

The investigator has programmed in such a way to combine the software catalogue on 'Trimmings and Decoration' along with the created 'A'-line frock patterns. A main-form was created, which acts as the start-up for the software. Three menu's have been created in the main form, 1st for the catalogue 2nd for frock patterns and the 3rd to exit or terminate the software. When the user selects the 'catalogue menu', forms related to the catalogue on 'Trimmings and Decoration' appears. If the user selects the 'Frocks menu' the frock form appears. A combo-box in the frock form allows the user to select the frock patterns, which are grouped according to their design and colour.

4. Evaluation of the developed software

Inorder to evaluate the developed software, hundred judges comprising of computer experts, computer experts with Textile knowledge and Fashion Designing students from Avinashilingam Deemed University, Coimbatore and from 'Indian Institute of Fashion Technology', Sai tower, Trichy Road, Ramanathapuram, Coimbatore-641 045, were selected. The method used for the evaluation was Visual Inspection. A questionnaire was prepared and used to evaluate the catalogue on 'Trimmings and Decoration'. A score card was prepared to evaluate the created frock patterns using computers. The prepared questionnaire and the score card are given in Appendix IV and V.

Plate 1

A-Line Frocks with Geometric design-Direct Complementary Colours

32a

Y.DC.G1



NH1.DC.G2



NH2.DC.G3



A0.DC.G4

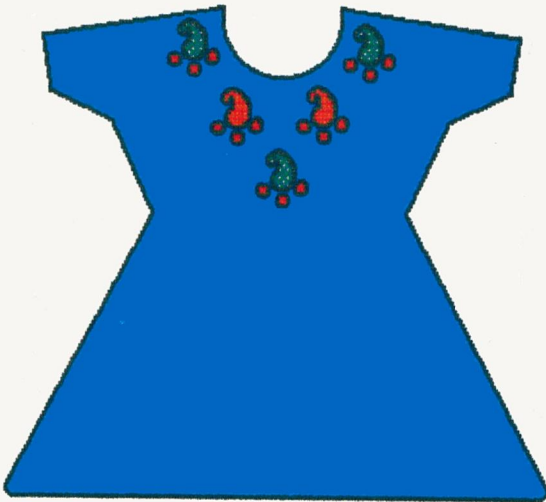


Y-Yoke part
NH1-Neckline to hemline
NH2-Neckline and hemline
A0-All-over
DC-Direct complementary colours
(Yellow and Violet)
G -Geometric design
G1,G2,G3, and G4 - Geometric Design Placement

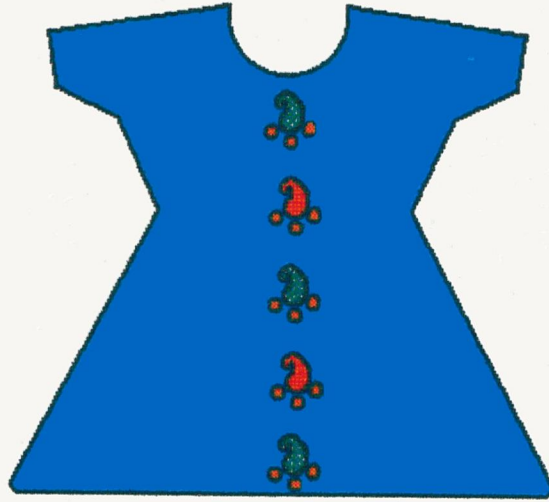
PLATE - 2

A-line Frocks With Conventional Designs-Double Complementary Colours

Y.DC2.C1



NH1.DC2.C2



NH2.DC2.C3



A0.DC2.C4



Y-Yoke part
 NH1-Neckline to hemline
 NH2-Neckline and hemlines
 A0-All-over
 DC2-Double complementary colours
 (blue, blue green, orange and red orange)
 C-Conventional design
 C1,C2,C3 and C4 - conventional Design placements

PLATE - 3

A-Line Frocks With Abstract Design-Split Complementary Colours

Y.SC.A1



NH1.SC.A2



NH2.SC.A3



A0.SC.A4



Y-Yoke Part
 NH1-Neckline to hemline
 NH2-Neckline and hemlines
 A0-All-over
 SC-Split Complementary colours
 (Green, red orange and red violet)
 A- Abstract design
 A1, A2, A3 and A4 - Abstract design placements

Results and Discussion

IV RESULTS AND DISCUSSION

The findings of the study are discussed under the following headings:

1. Evaluation of the developed catalogue on 'Trimmings and Decoration'
2. Evaluation of 'A' line frock patterns created using computers

1. Evaluation of the developed software catalogue on 'Trimmings and Decoration'

In order to evaluate the effectiveness of the developed catalogue on 'Trimmings and Decoration', hundred judges comprising of computer experts, computer experts with textiles knowledge and fashion designing students from Family and Community Science department, Avinashilingam Deemed University, Coimbatore, and from Indian Institute of Fashion Technology, Sai Towers, Ramanathapuram, Coimbatore, were selected as they have enough knowledge on computers and in Fashion Designing. A questionnaire was prepared and was given to the selected judges. They were requested to evaluate the developed catalogue.

It was found that hundred percent of the judges felt that the developed catalogue was easy to operate as well as sufficient facilities were provided to reach the desired section in the software. More than eighty five per cent of the judges expressed that all the pictures were suitably chosen to the terminologies. Less than five per cent of them felt that few more terminologies could be included in the catalogue.

The judges of computer experts strongly felt that all the terminologies could be arranged in one form, instead of individual form for each alphabet. The investigator created individual forms for each alphabet, so that there is a possibility to include the explored terms in duecourse along with the developed catalogue.

Almost all the judges appreciated and expressed that the developed software can very well be utilized as an effective visual aid for teaching. Less than ten per cent of them have expressed that the clarity of the pictures could be improved.

2. Evaluation of the 'A'-line patterns created using computers

The findings of the study are discussed under the following headings.

2. 1. Mothers preference regarding clothes for their preschool girls
- 2.2. Evaluation of the created 'A' line frock patterns
 - 2.1. Mothers preference regarding dresses for their pre school girls
 - 2.1.1. Choice of dress styles for the pre school girls by the mothers
 - 2.1.2. Fabric designs preferred by the mothers for the dresses
 - 2.1.3. Choice of design placement preferred by the mothers for their pre-school girl
 - 2.1.4. Colours preferred by the mothers for their girls dresses.

2.1. Mothers preference regarding clothes for their pre-school girls

2.1.1. Choice of dress styles for the pre-school girls by the mothers

The details regarding the dress styles preferred by the mothers for their pre school girls are given in Table I and figure 8.

TABLE

CHOICE OF DRESS STYLES FOR THE PRESCHOOL GIRLS

N =100	
Dress styles	Preference of dress styles in percentage*
'A' line frock	88
Middy with tops	10
Bermuda with tops	16
Churidar	5
Pedal pusher	9

* The total percentage exceeds 100 due to multiple response

From the above table it was clear that more than 88 per cent of the mothers preferred 'A'-line frock for their pre-school girls dress. This shows majority of the mothers preferred 'A'-line frock because of its its comfort, style and suitability during the active period of pre-school stage.

2.1.2. Fabric designs preferred by the mothers for the dresses

The details regarding the fabric design on various dress styles preferred by the mothers for their pre-school girls is given in Table II and figure 9.

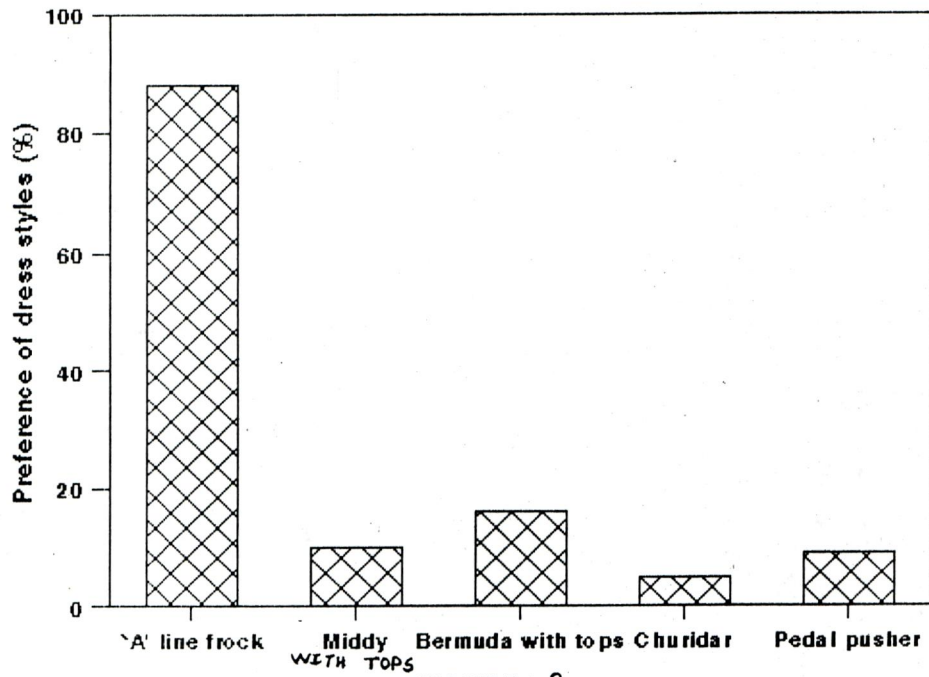


FIGURE - 8

CHOICE OF DRESS STYLES FOR THE PRESCHOOL GIRLS

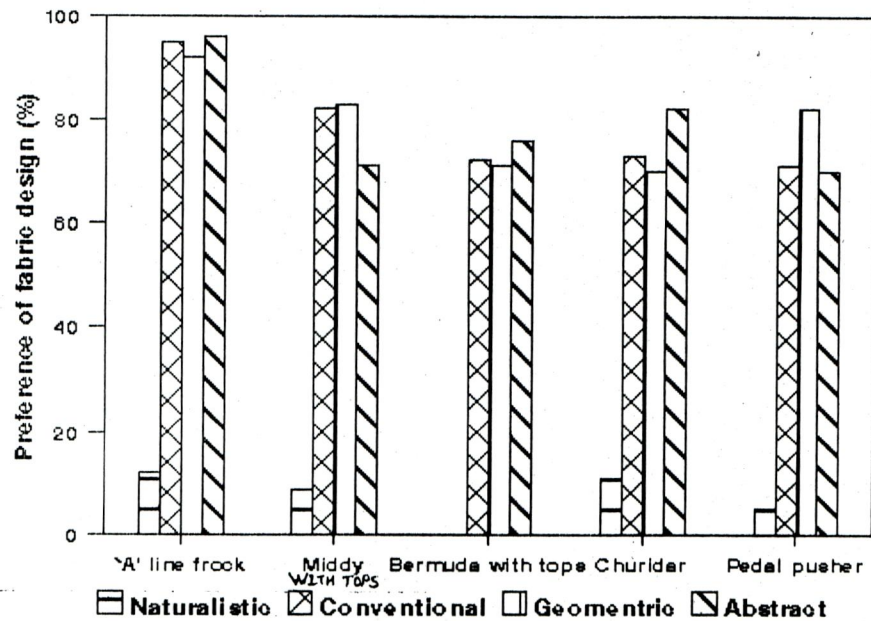


FIGURE - 9

FABRIC DESIGNS PREFERRED BY THE MOTHERS FOR THE DRESSES

TABLE II

FABRIC DESIGNS PREFERRED BY THE MOTHERS FOR THE DRESSES

N=100

Dress styles	<u>Preference of fabric design in percentage*</u>			
	Naturalistic	Conventional	Geometric	Abstract
'A'-line frock	12	95	92	96
Middy with tops	9	82	83	71
Bermuda with tops	-	72	71	76
Churidar	11	73	70	82
Pedal pusher	5	71	82	70

* The total percentage exceeds 100 due to multiple response

From the above table it was interesting to note that more than 70 per cent of the mothers preferred geometric, conventional and abstract designs for almost all the garments for their pre-school girls' dress. To satisfy the children's desire to wear their favourite designs in their dresses or may be due the confirmity of the designs to current fashion, the mothers might have preferred the above designs.

2.1.3. Choice of design placement preferred by the mothers

Design placement on various dress styles preferred by the mothers of pre-school girls is shown in Table III and figure 10.

TABLE III

CHOICE OF DESIGN PLACEMENT ON VARIOUS DRESS STYLES

Dress styles	<u>Choice of design placement in percentage*</u>			
	Yoke part	Neckline to hem line	Neckline and hem line	All-over
'A'-line frock	85	91	84	95
Middy with tops	82	86	80	81
Bermuda with Tops	91	85	92	80
Churidar	87	94	88	92
Pedal pusher	93	93	91	84

* - the total percentage exceeds 100 due to multiple response

Table III clearly shows that more than 80 per cent of the mothers preferred yoke part, neck line to hemline, neckline and hemline and all-over pattern, as placements for all the dress styles. As anything and every thing suits the pre-school children, the mothers might have preferred the above design placement in all the dress styles.

2.1.4. Colours preferred by the mothers for their girl's dresses

Colours preferred by the mothers for the dresses of pre school girls is shown in Table IV and figure 11.

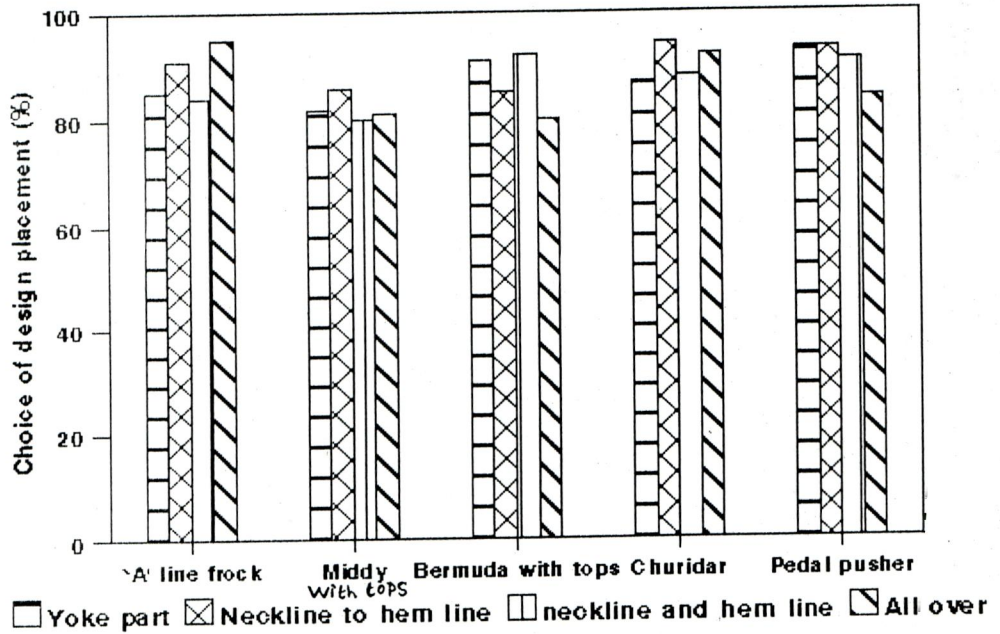


FIGURE - 10

CHOICE OF DESIGN PLACEMENT ON VARIOUS DRESS STYLES

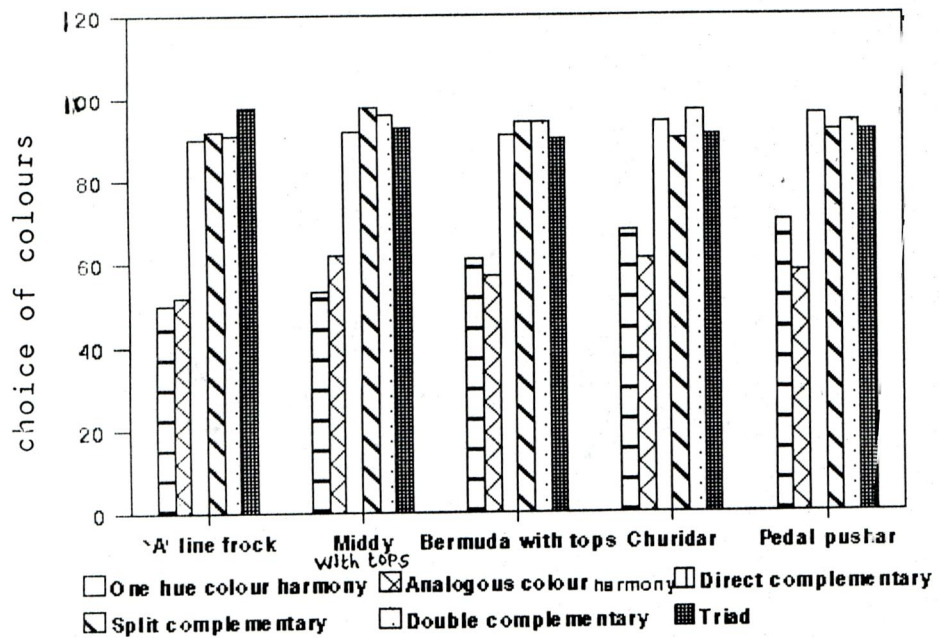


FIGURE - 11

CHOICES PREFERRED BY THE MOTHERS FOR THE DRESSES

TABLE IV

COLOUR PREFERRED BY THE MOTHERS FOR THEIR PRE-SCHOOL GIRLS

N=100

Dress styles	Preference of colour in percentage*					
	Related colour harmony		Contrasting colour harmony			
	One hue harmony	Analogous harmony	Direct complementary	double Plementary	Split Complementary	Triad
'A'-line frock	50	52	90	92	91	98
Middy with tops	53	62	92	98	96	93
Bermuda wtih Tops	61	57	91	94	94	90
Churidar	68	61	94	90	97	91
Pedal pushes	70	58	96	92	94	92

* - The total percentage exceeds 100 due to multiple response

From the above table it was interesting to note that above 90 per cent of the mothers preferred contrast colour harmony for almost all the dress styles. Pre-school stage is the active, cheerful and colourful stage in life. Considering this mothers might have preferred contrast colour harmonies which is more colourful and joyful for the pre-school children.

2.2. Evaluation of the created 'A' line frock patterns

In order to evaluate the effectiveness of the created 'A'-line frock patterns, hundred judges comprising of computer experts, computer experts with textile knowledge and

fashion designing students from Family and Community Science Department., Avinashilingam Deemed University, Coimbatore and from Indian Institute of Fashion Technology, Ramanathapuram, Coimbatore, were selected as they have enough knowledge on computers and in computer aided designing. A score card was prepared and given to the resulted judges. They were asked to evaluate that the created `A'-line frock patterns.

- 2.2.1. Evaluation of `A'-line frock patterns with geometric design
- 2.2.2. Evaluation of `A'-line frock patterns with conventional design
- 2.2.3. Evaluation of `A'-line frock patterns with abstract design

2.2.1.Evaluation of 'A'-line frock patterns with geometric design

TABLE V

EVALUATION OF 'A'-LINE FRACK PATTERNS WITH GEMOENTRIC DESIGN

S. 'A'-line frock No.		Design			Deisgn palacement			Colour		
		Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
1.	Y.DC.G1	100	-	-	100	-	-	100	-	-
2.	NH1.DC.G2	100	-	-	100	-	-	100	-	-
3.	NH2.DC.G3	100	-	-	100	-	-	100	-	-
4.	AO.DC.G4	100	-	-	99	1	-	99	1	-
5.	Y.DC2.G1	100	-	-	100	-	-	100	-	-
6.	NH1.DC2.G2	100	-	-	100	-	-	100	-	-
7.	NH2.DC2.G3	100	-	-	100	-	-	100	-	-
8.	AO.DC2.G4	100	-	-	100	-	-	99	1	-
9.	Y.SC.G1	100	-	-	100	-	-	100	-	-
10.	NH1.SC.G2	100	-	-	100	-	-	100	-	-
11.	NH2.SC.G3	100	-	-	99	1	-	100	-	-
12.	AO.SC.G4	100	-	-	100	-	-	100	-	-
13.	Y.T.G1	100	-	-	100	-	-	100	-	-
14.	NH1.T.G2	100	-	-	100	-	-	100	-	-
15.	NH2.T.G3	100	-	-	100	-	-	100	-	-
16.	AO.T.G4	100	-	-	98	2	-	100	-	-

Y - Yoke part

NH1 - Neckline to hemline

NH2 - Neck line and hemlines

AO - All-over

G - Deomeatric design

G1,G2,G3,G4 - design placement

DC - Direct complementary (Yellow and violet)

DC2- Double complementary (Violet, red vialet, yellow and yellow green)

SC- Split complementary (red, yellow green and blue green)

T - Triad (blue, red and yellow)

From the above table it was interesting to note that almost all the judges expressed that 'A'-line frock patterns with geometric designs were ranked as good. This maximum ranking by the judges may be due to the design created has a pleasing line and space relationship. More than 98 per cent of the judges expressed as good for the placement of designs. The reason for this may be due to the design being emphasized with moderation. With regard to colour except one per cent all the others stated as good. This may be due to the striking complementary colours used on the frock patterns, which will really suit the children of pre-school stage.

The satisfactory results expressed by the judges concludes that the 'A' line frock designs created by the investigator were well co-ordinated with art principles in order to achieve beauty.

2.2.2. Evaluation of 'A'-line frock patterns with conventional design

TABLE VI

EVALUATION OF 'A'LINE FROCK PATTERN WITH CONVENTIONAL DESIGN

S. 'A'-line frock No.	<u>Design</u>			<u>Deisgn palacement</u>			<u>Colour</u>		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
1. Y.DC.C1	100	-	-	100	-	-	100	-	-
2. NH1.DC.C2	100	-	-	100	-	-	100	-	-
3. NH2.DC.C3	100	-	-	100	-	-	99	-	-
4. AO.DC.C4	100	-	-	99	1	-	99	1	-
5. Y.DC2.C1	100	-	-	100	-	-	100	-	-
6. NH1.DC2.C2	100	-	-	100	-	-	100	-	-
7. NH2.DC2.C3	100	-	-	99	1	-	100	-	-
8. AO.DC2.C4	100	-	-	100	-	-	98	2	-
9. Y.SC.C1	100	-	-	100	-	-	100	-	-
10. NH1.SC.C2	100	-	-	100	-	-	100	-	-
11. NH2.SC.C3	100	-	-	100	-	-	99	1	-
12. AO.SC.C4	100	-	-	100	-	-	100	-	-
13. Y.T.C1	100	-	-	100	-	-	100	-	-
14. NH1.T.C2	100	-	-	100	-	-	100	-	-
15. NH2.T.C3	100	-	-	100	-	-	100	-	-
16. AO.T.C4	100	-	-	99	1	-	100	-	-

Y - Yoke part

NH1- Neck line to hemline

NH2- Neck line and hemline

AO - All-over

C - Conventional Design

C1,C2,C3,C4 - design placements

DC - Direct complementary (red and green)

DC2- Double complementary (blue, blue green, orange and red orange)

SC - Split complementary (orange, blue violet and blue green)

T - Triad (Green, orange and violet)

Table VI clearly shows that hundred per cent of the judges have ranked the conventional design as good. This may be due to the proportionate design on 'A'-line frock patterns, which inturn produces charming and graceful effect. The placement of designs on frock patterns giving a rest ful effect was ranked as good by 99 per cent of the judges. Except one per cent others have expressed as good regarding colour. The reason for maximum ranking may be due to the complementary colours used on the frock patterns, which might suit the pre school age children for their cheerful and joyful period.

As a whole, the results shows that the art principles play an important roll in achieving pleasing effect on dress designs.

2.2.3. Evaluation of 'A'line frock patterns with abstract design

TABLE VII

EVALUATION OF 'A'-LINE FROCK PATTERNS WITH ABSTRACT DESIGN

S. 'A'-line frock No.	<u>Design</u>			<u>Deisgn placement</u>			<u>Colour</u>		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
1. Y.DC.A1	100	-	-	100	-	-	100	-	-
2. NH1.DC.A2	100	-	-	100	-	-	100	-	-
3. NH2.DC.A3	99	1	-	100	-	-	100	-	-
4. AO.DC.A4	99	1	-	100	-	-	100	-	-
5. Y.DC2.A1	100	-	-	100	-	-	100	-	-
6. NH1.DC2.A2	100	-	-	100	-	-	100	-	-
7. NH2.DC2.A3	100	-	-	100	-	-	100	-	-
8. AO.DC2.A4	99	1	-	100	-	-	100	-	-
9. Y.SC.A1	100	-	-	100	-	-	100	-	-
10. NH1.SC.A2	100	-	-	100	-	-	100	-	-
11. NH2.SC.A3	100	-	-	100	-	-	100	-	-
12. AO.SC.A4	99	1	-	100	-	-	100	-	-
13. Y.T.A1	100	-	-	100	-	-	100	-	-
14. NH1.T.A2	100	-	-	100	-	-	100	-	-
15. NH2.T.A3	100	-	-	100	-	-	100	-	-
16. AO.T.A4	100	-	-	98	2	-	100	-	-

Y - Yoth part
 NH1-Neck line to hem line
 NH2-Neck line and hem line
 AO - All-over

DC - Direct complementary
 (blue and orange)
 DC2- Double complementary
 (yellow, yellow orange, violet and blue violet)

A - Abstract design
 A1, A2, A3, - Design placement

SC - Split complementary
 T - Triad (Yellow green, blue violet and red orange)

Table VII clearly shows that above 99 per cent of the judges have ranked the abstract design in 'A'-line frock as good. The reason for their ranking may be due to the design treated by the investigator expresses the current fashion. More than ninety eight per cent of the judges have expressed as good for the placement of design. The satisfaction may be due to the placement of designs at the good structural points on the 'A'-line frock patterns, which makes it more attractive and eye catching.

The above results have proved that the investigator has applied her skill and talent for the creation of beautiful designs.

Summary and Conclusion

V SUMMARY AND CONCLUSION

The birth of electronic computer has heralded the advent of augmentation of man's mental ability. In the advent of computers, there has been a revolutionary change in the industrial sector, including the textile industry. To keep pace with the diversity of modern generation's demand, more flexible, dynamic and versatile techniques like COMPUTER AIDED DESIGNING (CAD) has been developed. The computer is now a medium that can replace the traditional pen and paper techniques creating art images, rather than hand - sketching garments and drafting paper patterns.

"One's philosophy of clothing is largely
an expression of one's philosophy of life"

Clothing is one of the basic needs of life and is found to express the most suitable and acceptable medium of expression of art. The art of dressing smartly is not necessarily wearing the latest style but wearing the most becoming style, Proper TRIMMING and DECORATIVE details helps to obtain a quality look. Trimming is the form of contrasts of design, colour and texture, applied to the surface or edges of the garment, whereas decoration is the surface enrichment of a garment after the completion of garment construction.

The pre-school period from three to five years of age is a delightful period of enthusiasm, energy, activity and creativity. Good taste in clothing is developed by providing items of apparel that will suit the child, in style, design and colour. So variety should be introduced in

their garments through difference in style, design, colour and texture, which will enhance their aesthetic feelings. No such attempt has been made till recently to create a software catalogue on "TRIMMINGS AND DECORATION"

Keeping the above views in mind, the investigator has attempted to carryout a study with the specific aims and objectives:

1. Development of a software for a catalogue on 'Trimmings and Decoration'

To find the effectiveness of the developed catalogue.

2. Creation and application of designs and colours on pre-school girls' garment using computers

- To elicit the mothers preference regarding their pre-school girls garment
- To create designs and colours for pre-school girls' garment based on the mothers preference
- To apply the created designs with colour on pre-school girls garment
- To find the effectiveness of the created designs with colour on the garment.

1. Development of software for a catalogue on 'Trimmings and Decoration'

The investigator collected terminologies related to Trimmings and Decoration, from number of books, magazines, dictionaries and encyclopaedia's. They were grouped in alphabetic order to get a complete sequential list. In order to make it attractive and eye catching suitable pictures for

the respective terminologies were also collected by the investigator.

Windows 3.1 was chosen as the operating system as its graphical interface helps to create visually appealing applications.

Visual Basic 4.0 was chosen as the programming language by the investigator as it is the quickest and easiest way to create powerful applications for Microsoft Windows operating system.

The collected pictures related to different terminologies, were scanned, in original colour using a scanner and were stored in individual files as bitmaps.

Twenty six
forms were opened, one form for each alphabet. In each form a combo-box was created to list down the terminologies available a text-box and a picture-box were created to display the respective meanings and pictures. Five command buttons were created for the following purpose

Go to - to go to the desired alphabet

Search - to search for the desired term in their respective forms

Previous - to go to the form before

Next - to go to the form after

Exit - to quit from the catalogue

2. Creation and application of selected designs and colour on pre-school girl's garment based on mothers preference using computer.

2.1. Assessing the mother's preference regarding their choice of dresses for pre school girls

The investigator personally interviewed one hundred mothers of pre-school girls and found that 'A'-line frock with geometric, conventional and abstract designs were most preferred by the mothers. Majority of them preferred the placements of designs in yoke part, neckline to hemline, neckline and hemlines and all-over pattern with complementary colour harmonies, for their pre school girls.

2.2. Standardisation of the 'A'-line frock pattern, designs and colours

For easy manipulation of the pattern on the monitor a standardised (Azrapkar, 1995) 'A'-line frock pattern was reduced to 1/8 th scale and was taken as the standard pattern for the study. A simple geometric, conventional and abstract designs were created proportionately to suit the reduced frock pattern. The selected colours were created in the computer by varying the RGB values.

2.3. Application of the selected designs and colours on 'A'-line frock patterns using computer

The created designs were placed on the reduced 'A'-line frock patterns in its respective placements. Using the 'fill colour' tool the desired colours were opted from the created colour palette and the respective designs and the frock patterns were coloured.

3. Combining the software catalogue on 'Trimmings and Decoration with created frock patterns

The investigator has programmed in such a way to combine the software catalogue on 'Trimmings and Decoration' along with the created frock patterns. A main form was

created with three menu's, 1st menu to go to the forms related to catalogue, 2 nd menu to go the forms related to the created frock patterns and the 3rd to terminate from the software.

4. Evaluation of the developed software

The developed software was evaluated to find out its effectiveness by the selected judges by Visual Inspection. The results were as follows.

Almost all the judges expressed that the catalogue on 'Trimmings and Decaration' had enough facilities to reach any section of the catalogue and it was easy to operate. More than 90 per cent of the judges expressed that all the pictures were suitably choosen to the terminologies. The judges of computer experts viewed that the terminologies could be grouped in one form, instead of individual form for each alphabet. But the investigator has created individual forms for each alphabet, so that there is a possibility to include the explored terms in due course, with the catalogue.

All the judges appreciated the work carried out by the investigator and expressed that the developed software can very well be utilised as a visual aid for effective teaching at various levels.

Above 99 per cent of the judges have rated as good for all the three geometric, conventional and abstract designs. More than 98 per cent of them have expressed as good for the placement of designs on the 'A' line frock patterns. Ninety nine per cent of the judges ranked as good regarding colours used on 'A'-line frock patterns.

The above results shows that the art principles play an important role in achieveing pleasing effect on dress design. The results have proved that the investigator has applied her skill and talent for the creation of beautiful designs in a best suitable way which is made attractive and eyecatching. .

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Appendices

APPENDIX I

INTERVIEW SCHEDULE TO ELICIT INFORMATION REGARDING MOTHERS PREFERENCES TOWARDS THEIR PRE-SCHOOL GIRLS GARMENT

I. GENERAL INFORMATION

1. Name of the interviewer :
2. Name of the interviewee :
3. Address :
4. Educational qualification of the mothers :
5. Occupation of the mothers :
6. Type of family : Joint [] Nuclear []

II Expenditure pattern of the household (per month)

1. Total income of the family :
2. Amount spent for clothing :
3. Amount spent for the child's clothing :

III. Details on purchase of garments

1. Who purchases clothes for the child?
 - a. Child [] b. Father [] c. Mother []
 - d. Parents [] e. Any other []
2. How do you get clothes for the child?
 - a. Ready made [] b. Home made []
 - c. Tailor made []
3. How frequently do you get clothes for the child?
 - a. Once in a year [] b. Once in a month []
 - c. Festival times [] d. As per need []

IV. Details regarding dresses

1. What aspects will you consider while getting clothes for your child mention in order of priority
 - a. Comfort [] b. Cost [] c. Durability []
 - d. Suitability [] e. Colour [] f. Fashion []
 - g. Material []
2. What are the dresses that you normally include in your child's wardrobe. Mention in order of priority

- a. 'A'-line frock [] b. Middy []
 c. Bermuda with tops [] d. Churidar []

3. Indicate the choice of fabric design for different dress styles

 Fabric Design

Sl. No.	Dresses	Naturalis- tic	Geometric	Conventional	Abstract
---------	---------	-------------------	-----------	--------------	----------

- a. 'A'-line frock
 b. Middy with tops
 c. Bermuda with tops
 d. Churidar
 e. Pedal pusher

4. Indicate the design placement on various dress styles

 Design placement

Sl. No.	Dresses styles	Yoth part	Neckline to hemi line	Neckline and hem line	Waist line	Allover
---------	----------------	-----------	-----------------------	-----------------------	------------	---------

- a. 'A'-line frock
 b. Middy with tops
 c. Bermuda with tops
 d. Churidar
 e. Pedal pusher

5. Indicate the choice of colour for various dress styles

 Colours

Sl. No.	Dresses styles	Related colour	Contrasting colour	harmony
		One hue colour harmony	Analogoue colour harmony	Direct Split Double Triad compli-mentary comple-mentary comple-mentary

- a. 'A'-line frock
 b. Middy
 c. Bermuda with tops
 d. Churidar
 e. Pedal pusher

 V. Your suggestions

APPENDIX II

COMPLEMENTARY COLOUR HARMONIES USED ON VARIOUS DESIGNS

Complementary Colour harmonies	Designs		
	Gemoentric	Conventional	Abstract
Direct complementary	Yellow and violet	Red and green	Blue and orange
Double complementary	violet, red violet, yellow and yellow green	blue, blue green orange and red orange	yellow, yellow orange, violet and blue violet
Split complementary	Red, yellow green and blue green	orange, blue violet and blue green	green, red orange and red violet
Triad	Blue red and yellow	green, violet and orange	yellow green blue violet and red orange

APPENDIX III

VARIOUS RGB VALUES USED TO CREATE COLOURS IN COMPUTER

Colours	RGB VALUES		
	Red	Green	Blue
Red	255	0	0
Blue	0	255	255
Yellow	255	255	0
Orange	255	128	0
Green	0	128	0
Violet	64	28	114
Red violet	169	0	110
Blue violet	64	98	139
Blue green	67	209	157
Yellow green	162	255	0
Yellow orange	255	179	0
Red orange	255	61	0

APPENDIX IV

QUESTIONNAIRE FOR THE EVALUATION OF THE DEVELOPED SOFTWARE CATALOGUE ON 'TRIMMINGS AND DECORATION'

I General information

Name of the Interviewee :
Address:
Educational qualification :

II Details regarding the developed catalogue on 'Trimmings and Decoration'.

1. Is the operating technique easy to work with? Yes No

If yes, give reasons If no, give reasons

2. Indicate, whether there are enough facilities provided to go to any section in the catalogue? Yes No

If yes, give reasons If no, give reasons

3. Do you feel that the grouping of terms in alphabetic order necessary? Yes No

If yes, give reasons If no, give reasons

4. Do you find any features lacking in the catalogue, which can be included. Yes No

If yes give reasons If no, give reasons

5. Do you feel that even a person without computer knowledge can understand the catalogue Yes No

If yes give reasons If no, give reasons

6. Can this catalogue be used as a visual teaching aid for fashion designing students Yes No

If yes, give reasons If no give reasons

APPENDIX V

SCORE CARD USED FOR THE EVALUATION OF 'A'-LINE FROCK PATTERNS WITH CONVENTIONAL DESIGN

S. 'A'-line frock No.	<u>Design</u>			<u>Deisgn palacement</u>			<u>Colour</u>		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
1. Y.DC.C1									
2. NH1.DC.C2									
3. NH2.DC.C3									
4. AO.DC.C4									
5. Y.DC2.C1									
6. NH1.DC2.C2									
7. NH2.DC2.C3									
8. AO.DC2.C4									
9. Y.SC.C1									
10.NH1.SC.C2									
11.NH2.SC.C3									
12.AO.SC.C4									
13.Y.T.C1									
14.NH1.T.C2									
15.NH2.T.C3									
16.AO.T.C4									

Y - Yoke part
 NH1- Neck line to hemline
 NH2- Neck line and hemline
 AO - All-over
 DC - Direct complementary (red and green)
 DC2- Double complementary (blue, blue green, orange and red orange)
 C - Conventional Design
 C1,C2,C3,C4 - design placements
 SC - Split complementary (orange, blue violet and blue green)
 T - Triad (Green, orange and violet)

SCORE CARD USED FOR EVALUATION OF 'A'-LINE FRACK PATTERNS WITH
GEMOENTRIC DESIGN

S. 'A'-line frock No.	<u>Design</u>			<u>Deisgn palacement</u>			<u>Colour</u>		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor

1. Y.DC.G1
2. NH1.DC.G2
3. NH2.DC.G3
4. AO.DC.G4
5. Y.DC2.G1
6. NH1.DC2.G2
7. NH2.DC2.G3
8. AO.DC2.G4
9. Y.SC.G1
10. NH1.SC.G2
11. NH2.SC.G3
12. AO.SC.G4
13. Y.T.G1
- 14.NH1.T.G2
- 15.NH2.T.G3
- 16.AO.T.G4

Y - Yoke part	DC - Direct complementary (Yellow and violet)
NH1 - Neckline to hemline	DC2- Double complementary (Violet, red vialet, yellow and yellow green)
NH2 - Neck line and hemlines	SC- Split complementary (red, yellow green and blue green)
AO - All-over	T - Triad (blue, red and yellow)
G - Deomeatric design	
G1,G2,G3,G4 - design placement	

SCORE CARD USED FOR EVALUATION OF 'A' LINE FROCK PATTERNS
WITH ABSTRACT DESIGN

 S. 'A'-line frock No. Design Deisgn placement Colour
 Good Fair Poor Good Fair Poor Good Fair Poor

1. Y.DC.A1
2. NH1.DC.A2
3. NH2.DC.A3
4. AO.DC.A4
5. Y.DC2.A1
6. NH1.DC2.A2
7. NH2.DC2.A3
8. AO.DC2.A4
9. Y.SC.A1
10. NH1.SC.A2
11. NH2.SC.A3
12. AO.SC.A4
13. Y.T.A1
14. NH1.T.A2
15. NH2.T.A3
16. AO.T.A4

Y - Yoth part	DC - Direct complementary (blue and orange)
NH1-Neck line to hem line	DC2- Double complementary (yellow, yellow orange, violet and blue violet)
NH2-Neck line and hem line	
AO - All-over	
A - Abstract design	SC - Split complementary
A1, A2, A3, - Design placement	T - Triad (Yellow green, blue violet and red orange)

APPENDIX VII

SOURCE CODE OF SOFTWARE FOR THE MAIN FORM

```

Dim alpha As String
Private Sub arra_Click()
Me.Arrange 3
End Sub

Private Sub cas_Click()
Me.Arrange 0
End Sub

Private Sub cata_Click()
alpha = InputBox("Enter any alphabet between 'A' - 'Z'")
Select Case LCase(alpha)
  Case "a"
    Unload Me
    Form1.Show
  Case "b"
    Unload Me
    Form2.Show
  Case "c"
    Unload Me
    Form3.Show
  Case "d"
    Unload Me
    Form4.Show
  Case "e"
    Unload Me
    Form5.Show
  Case "f"
    Unload Me
    Form6.Show
  Case "g"
    Unload Me
    Form7.Show
  Case "h"
    Unload Me
    Form8.Show
  Case "i"
    Unload Me
    Form9.Show
  Case "j"
    Unload Me
    Form10.Show
  Case "k"
    Unload Me
    Form11.Show
  Case "l"
    Unload Me
    Form12.Show
  Case "m"
    Unload Me
    Form13.Show
  Case "n"
    Unload Me
    Form14.Show
  Case "o"
    Unload Me
    Form15.Show
  Case "p"
    Unload Me
    Form16.Show
  Case "q"
    Unload Me
    Form17.Show
  Case "r"
    Unload Me
    Form18.Show
  Case "s"
    Unload Me
    Form19.Show
  Case "t"
    Unload Me
    Form20.Show
  Case "u"
    Unload Me
    Form21.Show
  Case "v"
    Unload Me
    Form22.Show
  Case "w"
    Unload Me
    Form23.Show
  Case "x"
    Unload Me
    Form24.Show
  Case "y"
    Unload Me
    Form25.Show
  Case "z"
    Unload Me
    Form26.Show
  Case Else
    MsgBox " type an alphabet "
    & "between 'A' - 'Z'"
End Select
End Sub

Private Sub exit_Click()
End
End Sub

Private Sub frock_Click()
frocks.Show
End Sub

Private Sub hori_Click()
Me.Arrange 1
End Sub

Private Sub vert_Click()
Me.Arrange 2
End Sub

```

SOURCE CODE FOR FORM I (ALPHABET "A")

```
Private Sub cboa_Click()
MousePointer = 11
Select Case cboa.ListIndex
Case 0
    lblDispa.Caption = "Design which does not have any concrete motif"
    pica.Picture = LoadPicture("c:\sange\bmp\a1.bmp")
Case 1
    lblDispa.Caption = "Any wide lace usually of many inches wide"
    pica.Picture = LoadPicture("c:\sange\bmp\a2.bmp")
Case 2
    lblDispa.Caption = "A mesh tight lace without scalloped edge"
    pica.Picture = LoadPicture("c:\sange\bmp\a3.bmp")
Case 3
    lblDispa.Caption = "Any open coarse form of darned lace"
    pica.Picture = LoadPicture("c:\sange\bmp\a4.bmp")
Case 4
    lblDispa.Caption = "Decorative motif of any material applied on the garment"
    pica.Picture = LoadPicture("c:\sange\bmp\a5.bmp")
Case 5
    lblDispa.Caption = "A coarse , narrow , crochet lace edging"
    pica.Picture = LoadPicture("c:\sange\bmp\a7.bmp")
Case 6
    lblDispa.Caption = "Embroidered triangle usually half inches long on each side"
    pica.Picture = LoadPicture("c:\sange\bmp\a8.bmp")
End Select
MousePointer = 0
End Sub
```

```
Private Sub sscmdNext_Click()
    Form2.Show
    Me.Hide
End Sub
```

```
Private Sub sscmdNxt_Click()
    Form2.Show
    Me.Hide
End Sub
```

```
Private Sub sscmdPrv_Click()
    Form26.Show
    Me.Hide
End Sub
```

```
Private Sub Form_Load()
    cboa.AddItem "Abstract design"
    cboa.AddItem "All-over lace "
    cboa.AddItem "All-over net"
    cboa.AddItem "Antique lace"
    cboa.AddItem "Applique"
    cboa.AddItem "Armenian lace"
    cboa.AddItem "Arrow head"
End Sub
```

```
Private Sub sscmdExit_Click()
    Unload Me
End Sub
```

```
Private Sub sscmdGoto1_Click()
    lblSearch.Visible = True
    txtSearch.Visible = True
    txtSearch.SetFocus
End Sub
```

```
Private Sub ssSearch1_Click()
    word = LCase(InputBox("Enter the word you want to search", "Searching", , 500, 6000))
    word = UCase(Mid(word, 1, 1) & Mid(word, 2, Len(word)))
    For i = 0 To cboa.ListCount
        If cboa.List(i) = word Then
            cboa.Text = cboa.List(i)
            Call cboa_Click
            Exit Sub
        End If
    Next i
    If cboa.Text <> word Then
        MsgBox "The specified word is not " _
            & "found in the catalogue"
    End If
End Sub
```

```
Private Sub txtSearch_Change()
    Select Case LCase(txtSearch.Text)
        Case "b"
            Unload Me
            Form2.Visible = True
        Case "c"
            Unload Me
            Form3.Visible = True
        Case "d"
            Unload Me
            Form4.Visible = True
        Case "e"
            Unload Me
            Form5.Visible = True
        Case "f"
            Unload Me
            Form6.Visible = True
        Case "g"
            Unload Me
            Form7.Visible = True
        Case "h"
            Unload Me
            Form8.Visible = True
        Case "i"
            Unload Me
            Form9.Visible = True
        Case "j"
            Unload Me
```

```
        Form10.Visible = True
    Case "k"
        Unload Me
        Form11.Visible = True
    Case "l"
        Unload Me
        Form12.Visible = True
    Case "m"
        Unload Me
        Form13.Visible = True
    Case "n"
        Unload Me
        Form14.Visible = True
    Case "o"
        Unload Me
        Form15.Visible = True
    Case "p"
        Unload Me
        Form16.Visible = True
    Case "q"
        Unload Me
        Form17.Visible = True
    Case "r"
        Unload Me
        Form18.Visible = True
    Case "s"
        Unload Me
        Form19.Visible = True
    Case "t"
        Unload Me
        Form20.Visible = True
    Case "u"
        Unload Me
        Form21.Visible = True
    Case "v"
        Unload Me
        Form22.Visible = True
    Case "w"
        Unload Me
        Form23.Visible = True
    Case "x"
        Unload Me
        Form24.Visible = True
    Case "y"
        Unload Me
        Form25.Visible = True
    Case "z"
        Unload Me
        Form26.Visible = True
    End Select
End Sub
```