Chapter- 13:
Computerization in Textile Design

13.1 INTRODUCTION

In recent past computers have played an important role in developing the designs extensively. Computers and electronics devices are important in developing design using sophisticated **CAD (Computer Aided Design)**. Microcomputers control the operations of individual thread to create the design. Quick Style Change (QSC) and electronic jacquard allow changes from one fabric style to another in a few minutes, as compared with the several hours of hard work. With QSC shorter minimum yardage order is possible. There are several agencies in the world selling customized CAD software meeting the needs in wider range.

Application of Computer technology in weaving has made tremendous advances. Automation helps reduce fabric defects and made the delivery of the fabric faster. Weaving quality and efficiency have improved as some mills started using automatic looms with multifunctional microcomputers. The computer alters loom operation so that high speed of filling insertion are maintained while adjusting for minor changes in tension of both warp and filling yarns and winding up woven fabric. Computer detects incorrect filling insertions, removes the incorrect insertion, correct the problem, and restart the weaving operation.

13.2 ADVANCEMENTS IN LOOM TECHNOLOGY

Over the years several Research and Development (R&D) have been carried out in sophisticated and advanced weaving technologies. Hence this has placed weaving industry in dealing with the customer demand more effectively. The advancements have centred mainly on:

1. Devices to weave the more complex and intricate designs
2. Advanced computer application and electronic monitoring system to increase the speed, efficiency of the machine. This in turn has improved the quality of the fabric.
3. Faster and more efficient means of inserting filling yarns
4. Automation of devices to speed the take-up of woven fabric and let-off motions.
5. Devices that facilitate and speed up changing the warp.

Summary:

Computers have played an important role in developing the designs easily. It reduces the production cost. The visual appearance of the fabric can be seen by stimulating it on the Computer. Computers and electronics devices are important in developing design using sophisticated CAD. This chapter very briefly informs the students about the computerization in the textile industry and new advancements. More research and advancements are still happening in this sector.

Unit - 4 Assignment

1. Assignment:

Visit a fabric production unit nearby your house or school, collect yarns, fabric samples, photograph of various looms and make a visual presentation in your learning diary. Alternatively a visit to a fabric production unit can be arranged by school and then students may be asked to complete the above task.

2. Answer the following questions

Q.1. What are the various end uses of the fabrics, name any 10 of it?

Q.2. Name the various segments of the Indian textile industries?

Q.3. Name the kind of shawls produced by the Kashmiri weavers?

Q.4. Name the basic structure of the Indian textile industries?

Q.5. Name the type silk produced in Assam?

3. Fill up the blank.

1. The Surat……is based on a technique of satin weaving.
2. The ……technique of plain woven fabric is brocaded with untwisted silk thread.
3. ……is a strong, durable, closely plain woven cotton fabric.
4. ……..a fabric, usually made of cotton or a cotton blend, utilizing a cut-pile weave construction.
5. ……..is Strong, medium- to heavyweight, warp-faced, twill-weave fabric.

4. Choose the correct answer from the given options.

1. CAD is

a) Computer aided design

b) Computer aided disk

c) Computer aided drawing

d) None of the above

2. Velvet and terry are

a) Very hard kind of fabrics

b) Loop or cut form of pile fabrics

c) Weft dominant fabrics

d) Fabric produces diagonal lines

3. Hound's tooth effect is produced

a) by 2:2 ratio warp series

b) by 2:1 ratio warp series

c) by 1:2 ratio warp series

d) None of the above

4. Organdy is a fabric

a) With high twisted yarn

b) Having light with and stiffened

c) Having derivatives of plain weave

d) Balanced twill

5. A fabric with pucker

a) Seer sucker

b) organza

c) Pique'

d) None of the above