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Significance of CAD software in the development of traditional handloom motifs

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Abstract
Weaving is one of the oldest crafts known to man in Indian tradition that gives a boost to the designer's innovation as it helps in adding diverse essence to the costume and distinction to its wearers. Woven design is effective and efficient with suitable motifs. The colors, patterns and designs signify artistic property and social significance. Weavers work from a graph of small designs. This complete process of designing in graph is lengthy and time consuming. A technical revolution has been taking place in the world of textiles and fashion. Since the 1990s, software for use in the fashion and textiles industry has become increasingly sophisticated. This paper has tried to introduces some key issues regarding the use and role of CAD in developing woven textiles designs, A study was conducted in the Department of Textiles and Apparel Designing, College of Community Science, Assam Agricultural University to design kurti center panels using traditional motifs of Assam with Reach Tex Cad software. The study deals with the collection of traditional motifs and development of center panel design using Reach Tex CAD software. For the selection of the CAD developed motifs and placement on center panels of the kurti, a total of 30 respondents of female students were taken from Assam Agricultural University for taking the preferences. Results of the research study are showed that majority of respondents has ranked design 1 as 1rank with highest score of 93 and mean score 3.10 in regards to both placement and selection of motifs.

Keywords: Traditional motifs, designs, reach tex cad, woven kurtis, center panel

1. Introduction
Designing textiles is an artistic and technical development that depends upon the skill of the textile designer to combine artistic sensibility with a strong knowledge of the technology of resources and fabric construction machinery. Conventionally, drawings of woven textile designs were transformed onto special forms in graph paper called point papers, by the designers which was very difficult and time consuming for drafting the design (Dewan, S. (2013) [6].

Guerrero (2010) [5] emphasize that the immediacy of pen and paper as design tools will never be replaced, but that 'it is essential to note the increasingly important role that digital processes are playing in completing the representation of design. A viable solution to these problems was introduced as Computer Aided Designing (CAD). The entire design process of woven textile has modernized due to the application of Computers for almost 25 years (Tallon, K. 2013) [11]. There has been a revolutionary in complete thought-process from the drawing of design to finishing production (Kaur, H. 2008) [7]. In CAD systems, woven designing drive in a sequence of basic steps.

Digitizing of the design helps the designer to see the drawing on a computer monitor by scanning or by generating a new design using the CAD system drawing tools directly. This allows the designer to adapt patterns and reduce the number of colors to a convenient number which is generally done in 8-bit format (256 colors) and the second step is fabric designing, in which the artwork image data is altered into weaving material for fabric production. The third step is weave allocation, in which data from the artwork image can be changed into a woven fabric. In the design, designer can create or chose suitable desired colour, shape or texture for selected weave structure and can also preview the finishing fabric on the display monitor. By seeing the preview, the designer can endlessly adapt the design, and can change the weaves to modify the design as essential (France, A. K. 2013) [4]. To understand and be knowledgeable about woven design is still a matter of mastery of weaving technique and mathematics, and the competitive environment within which the textiles industry operates requires computer aided

design (CAD) skills to develop new products and new textiles applications. This paper presents the development of Assamese motifs and center panel designs for the handloom kurtis using REACH TEX CAD. The design has been created from the developed motifs and designs are placed in the center panel of kurti. For each design selected color was constant. This present study was conducted with the following objectives.

1. To develop motifs for Center panel designs using Reach Tex Cad Software.
2. To study the preferences of the respondents regarding center panels of the kurtis.

2. Research methodology

The study was conducted in the Department of Textiles and Apparel Designing, College of Community Science, Assam Agricultural University, Jorhat district of Assam. A total of 24 motifs were collected and developed digitally using Reach Tex Cad Software for the development of 28 center panel design. A research schedule was developed to select seven center panel designs with regards to selection and placement of motifs for the weaving of fabric for kurtis. A total of 30 female respondents were selected from Assam Agricultural University campus for taking the preferences.

3. Results and Discussion

3.1 Collection of traditional Assamese motifs

The traditional Assamese motifs were collected from various primary and secondary sources such as internet, magazines and books and also through personal visit to collect information's from weavers of Assam.

3.2 Development of Traditional Assamese motifs using Reach Tex CAD Software

The collected twenty- four (24) traditional Assamese motifs were developed using Reach Tex Cad software. The developed motifs were shown in fig 1.

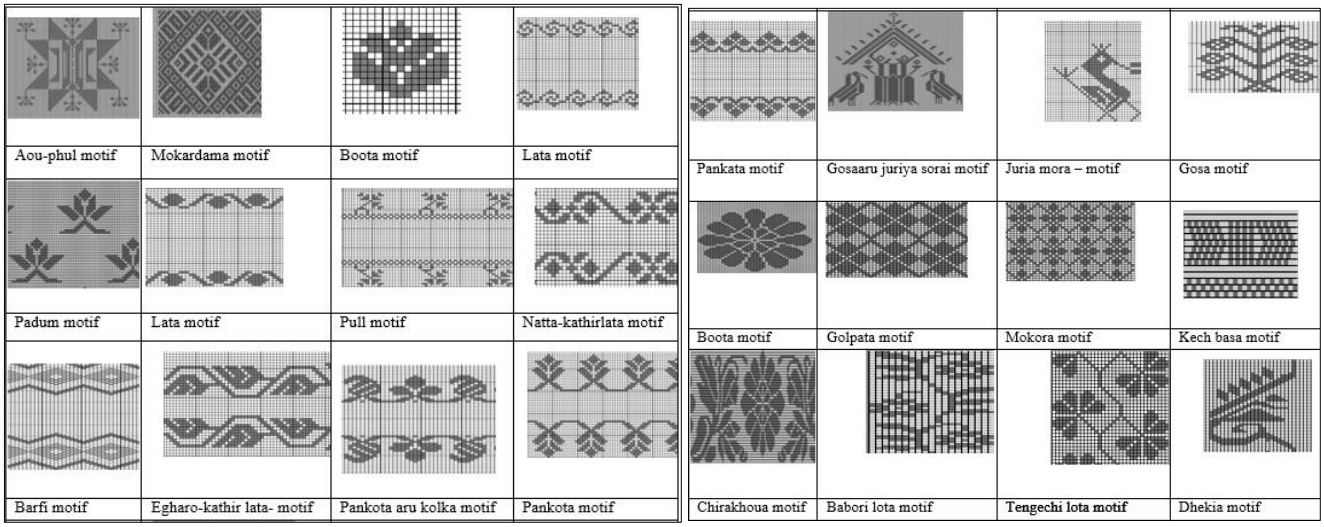
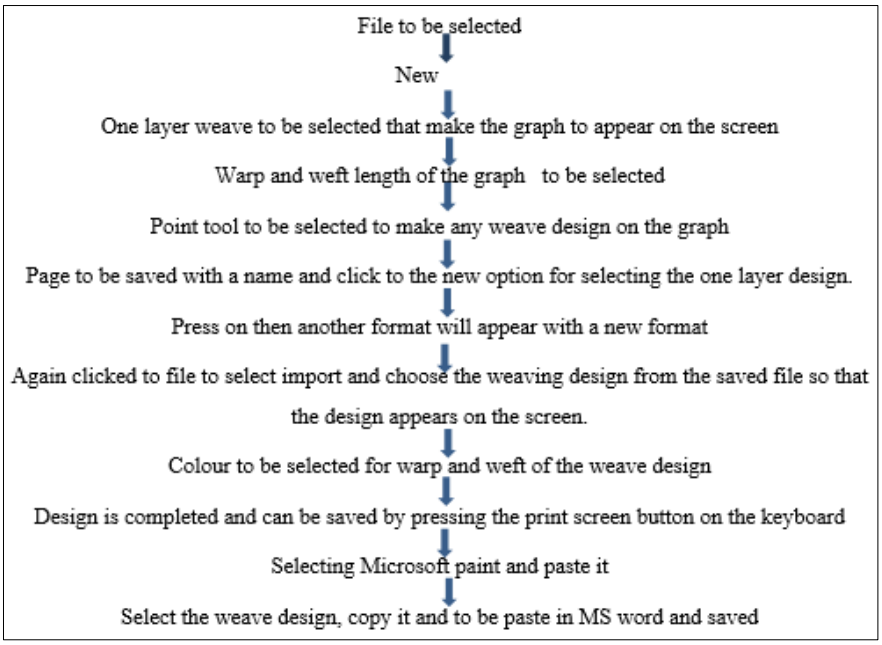


Fig 1: Developed Traditional Assamese motifs

3.3 Steps involved in development of motifs in Reach Tex Cad



3.4 Development of center panel designs using Reach Tex Cad Software

A total of twenty-eight (28) center panel designs were developed using Reach Tex Cad Software. A research schedule was developed to select seven center panel designs for the weaving of fabric for kurtis. The developed seven center panel designs were shown as Fig.2

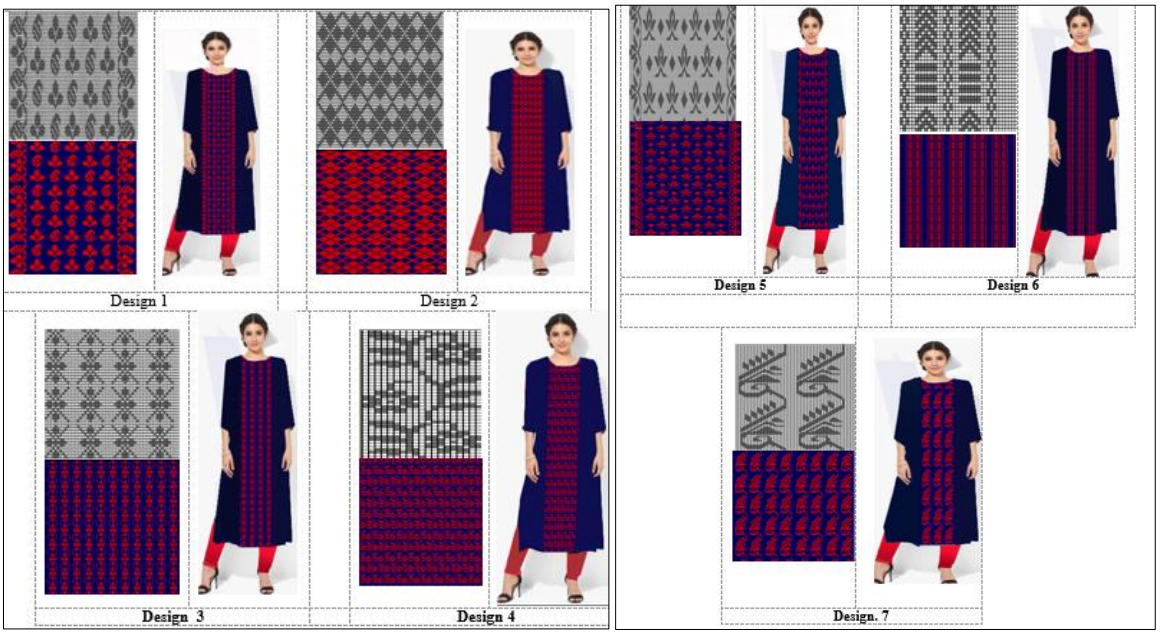


Fig 2: Developed center panel designs using Reach Tex Cad Software

3.5 Preferences of the respondents for selection of the motifsof the prepared kurtis

Table 1 showed the preferences of respondents regarding selection of the motifs for the center panel design.

The preference of the respondent regarding the motifs used in the selected seven center panel designs were ranked on the basis of mean score. Table 1 revealed that Design no 1. (Mean score 3.10) has given the first rank and second rank followed by design no 6(Mean score 3.00) while third rank were awarded to design no. 4(mean score 2.93) and design no. 3(mean score2.80) was given the fourth rank followed by design no.7 (Mean score 2.30), design no 2.(mean score 1.60) respectively. The least preference was given to design no. 5(Mean score 1.5)

Table 1: Preferences of the respondents regarding selection of the motifs.

Design no.	Score	Mean score	Rank
1.	93	3.10	I
2.	48	1.60	VI
3.	84	2.80	IV
4.	88	2.93	III
5.	45	1.5	VII
6.	90	3.00	II
7.	69	2.30	V

N= No. of respondents=30

3.6 Preferences of respondents regarding placement of the motifs on center panels

Table 2 revealed the preferences of respondents regarding placement of the motifs for the center panel design

The preference of the respondent regarding the placement of motifs in the seven center panel designs were ranked on the basis of mean score.

Table 2 revealed that Design no. 1(mean score 3.10) has awarded the first rank and second rank followed by design no 7(Mean score 3.00) while third rank were awarded to design no. 4(Mean score 2.93) and design no 2. (Mean score2.80) was given the fourth rank followed by design no.6(mean score 2.30), design no 5.(Mean score 1.60) respectively. The least preference was given to design no. 3(mean score 1.5).

Table 2: Preferences of the respondents regarding placement of the motifs on center panels

Design no	Score	Mean score	Rank
1.	93	3.10	I
2.	84	2.80	IV
3.	45	1.5	VII
4.	88	2.93	III
5.	48	1.60	VI
6.	69	2.30	V
7.	90	3.0	II

N= No. of respondents=30

4. Conclusion

From the study it was concluded with Reach Tex Cad software, it is now probable to go straight from an preliminary idea to photographic representation of fabric displaying different types of designs and mixtures of colors. Better quality and flexibility has been featured in design development in textile through Reach Tex Cad Software, increasing the productivity and shortening the time between the design model and actual marketing. The motifs were successfully created in Reach Tex CAD Software in a very less time for the development of center panel designs. Twenty Eight center panel designs were developed out of that seven were selected for the construction of the kurtis. For the selection of the Cad developed motifs and placement on center panels of the kurti, a total of 30 respondents of female students were taken from Assam Agricultural University for

taking the preferences. Results of the research study are showed that majority of respondents has ranked design 1 as 1rank with highest score of 93 and mean score 3.10 in regards to both placement and selection of motifs.

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