CHAPTER - 3

METHODOLOGY
Today Maharashtra is the home of the most celebrated textile, the Paithani, gold embroidered Zari Saree with its wonderful designs and woven borders. Even during the medieval period the interaction between the Hindu and Muslim rulers gave rise to new styles. The Marathas extended their patronage to textile activities. Among many such places in India, Maharashtra is one where people still follow traditional weaving and is famous for its interesting hand-woven products. The famous hand-woven textiles of Maharashtra is the 'Paithani' from Paithan and Yeola. In Maharashtra, Yeola is a place in Nashik District where Weavers do the Paithani-Weaving in their traditional manner.

According to Indian Textile Journal (1994) Handloom has been a tradition and a craft handed down from generation to generation. Generally customs determine the continually of these traditions and each village develops its own skill and craft, and its distinct patterns. Handloom industry is the largest unorganized sector and constitutes an integral part of the rural life of the country. According to Indian Textile Journal(1997), Despite strong competition from Mill made textiles, Handloom fabrics are still in demand to some extent primarily because of the popular patronage of the women folk. In this dynamic era, fast changes in fashion trend have led to increasing demand for Handloom products from even the foreigners and at times the demand is virtually more than that of the supply.

Several studies were conducted on 'Textiles' which was the main focus of attention but the focus is never on the Handloom industry. There are many centers which are famous for their Handloom products and they are flourishing day by day. For e.g. - Banaras Silk Saree, Kanchipurum Saree, Sambalpur Saree, Paithani Saree, Patola Sarees, etc. are the few names among them. However even though there is a large margin of profit in this industry, the heart of weaving that is the Weaver is neglected. The Weaver is kept in the state of poverty and middleman tries to grab the market. As

Attitudes towards New Techniques in Dyeing and Designing among the Paithani Weavers of Yeola.
far as the raw material is concerned Weaver has to depend on businessman and the prices of raw material is decided by them which directly affect the cost of Saree. Once the raw material is received, the preparatory processes like silk degumming, dyeing and warping is necessary for which the role of Dyer is very important. Ultimately, the quality maintenance of Saree is in the hands of Weavers and Dyers. When the people spend too much to buy this traditional Saree, they are desirous to get latest attractive designs, color guarantee alongwith quality. And the Dyers and Weavers should be enable to fulfill the demands of customers as per current trend. Considering the problems of Dyers and Weavers, investigator had tried to give them the exposure regarding the new techniques related to Dyeing and Designing.

Hence the present study is related to the Dyers and Weaver, as such the samples selected were:
1. Paithani Silk Dyers.
2. Paithani Weavers
The Weavers population is large however the silk Dyers are very few i.e. only three in number, who dye the silk on large scale. But Weavers also dye the silk on their own as per their necessity and demand. The dyeing of silk direct affects the quality of Paithani so the Dyer's role in this study is very important. The another sample was Weaver, on which the Paithani's entire outlook is dependent. So it was necessary to consider both types of samples for experimentation.

3.1 LOCALE OF THE STUDY:
Since the Paithani sarees are mainly manufactured in Yeola, the locale selected was Yeola. Paithani weaving is mainly carried out in Yeola and Nagade village, on large scale. Considering the necessity of the Paithani Weavers and Dyers, Yeola (District Nashik) was selected for this study. The area where the weaving goes on, are Khatri galli, Khanapure Galli, Kukkar Galli, Madhali Galli, Patole Galli, Bhandange Lane, Pahilwan Lane, which were selected for the study. The Weaver's community belongs to kshatriya, (khatri) Sali, koshti, Nagpure and Dyers community belongs to Bhavasar.

Attitudes towards New Techniques in Dyeing and Designing among the Paithani Weavers of Yeola.
Yeola is a small town having population of over 40,000 (Director of Economic and Stasts 1999-2000) located in the eastern part of the Nashik district and west of Aurangabad at 200, 2' North. Latitude and 740, 30' East longitude. (Maharashtra State Gazetteer, 1975)

Yeola is a Taluka place 90 Km. away from Nasik and at a uniform distance (100-110 Kms.) from Aurangabad, Ahmednagar and Dhule. It is just 35 kms. away from the famous pilgrimage center 'Shirdi'. It is the epicenter for Paithani weaving. This activity was further spread to two nearby villages viz. Nagade and Bhallegaon mainly due to promotional intervention taken by NABARD in the year 1996-97. (NABARD Review paper 2002)
3.2 SAMPLE AND SAMPLING TECHNIQUE:
In the present study, a survey was planned to know the present status of the Weavers and Dyers, acquired over the generations. Yeola is known all over Maharashtra and India for the "Paithani". In order to know more about the Weavers at Yeola, a list of about 1200 Weavers was prepared. This list was made available by the self help groups, NABARD, that work for the uplift of this cohort of the population. In all there were such 10 groups and each group on an average has 120 Weavers on their muster. It means, we have a population of 1200 Weavers, stratified into 10 strata. For obvious limitations of resources, trained manpower, money and time, total census was out of question. The alternative was a sample survey.

3.2.1 Sample for Survey:
The purpose of a sample survey is to collect the relevant information from the sampled units in order to know more about the population characteristics. So investigator decided to collect information on 200 Weavers. The sample size was thus 16% of the population, and by any means it is more than sufficient. Since there were 10 self help groups of the Weaver community - prepared as per the place of residence and other factors such as turnover of their individual business, community etc, it is prudent to select a SRSWOR (simple random sample without replacement) from each of the stratum and get a stratified random sample. Statistical advice was taken and with a random sample of Weavers that were selected randomly were listed. Each of them was individually informed and after a thorough discussion with them, they were selected as individual sampled unit in the present study.

3.2.2 Sample for Training:
Though the survey was conducted for 200 samples to know their socio-economic status, the sample size for training was 120. The sample size was restricted as the training was a scientific and technical at least requires basic
knowledge, skill and attitude to learn new techniques. Controlling large group for such training is not only difficult but do not achieve the aim. So Priority was given to those samples who belonged to most needed category.

The participation also was dependent on independent variables which encourage them to participate in training programs and their heavy schedule of weaving was also taken care of while deciding the sample size. Their willingness, interest and intensity of need to participate was very important so each training program carried sample size 40.

Even if overall 120 trainees were interested to learn, their learning interest was bifurcated into two aspects i.e. "Silk dyeing" and "Paithin Designing". Considering the above mentioned factors the sample size selected for training in 'Silk dyeing' was 40 and for 'Paithani Designing' was 80.

The number of Master Dyers are only three and the Weavers who carry out the dyeing activity on their own as per necessity are also very few. So the sample size for "Silk dyeing" training was 40.

3.3 PRE-TRAINING EVALUATION:
The present study is related to the attitude of Paithani silk Dyers and Weavers towards the new technique in silk dyeing and Paithani designing so pre-training evaluation was conducted in the beginning, to know their socio-economic status, their willingness to learn new technique, to test their knowledge, skill and attitude towards new technique. As a result of which, it was decided to collect the data regarding socio-economic status through Questionnaire and data regarding knowledge, skill, attitude through rating scales.
METHODOLOGY

Survey

Socio-Economics Status

Dyer

Weaver

Analysis of Trainees

Independent Variable

Dependent Variable

Training Implementation

Training in Silk Dyeing

Training in Paithani Designing Group II

Training in Paithani Designing Group I

Training Evaluation
INTERACTION BETWEEN INDEPENDENT VARIABLES

- Socio-Economic Status
  - Income of family
    - Interaction between components
      - Age and Education
      - Adaptation of weaving and Categorywise occupation
      - Size and Type of Family
  - Testing or Analysis
3.3.1 Tools Used for Survey:

Questionnaire:

Tool used for survey was Questionnaire (Annexure-1). While constructing the questionnaire, expertise of statistician has taken and step by step all the factors were included. First, the major factors which reflected the socio-economic status were enlisted and then the sub factors were noted down. During the survey it was specifically noted that the trainees liked to learn new techniques, which further improved their skills along with their routine procedure, which has also been listed down as the expectations of the trainees in order of their priorities.

The second part in the questionnaire dealt with Dyeing aspect and the questions were framed regarding the traditional method of dyeing used by them, dyes used, shades achieved in routine, existing problems faced by them, and procedure of testing the dyed sample for colorfastness.

The third part refers to the designing aspect, which was related to the traditional method of designing, problems faced by them in designing, designs produced in routine, nature of available designs. Lastly their willingness in learning new techniques in Silk dyeing and Paithani designing, training programme and participation in training programme, were noted down.

Survey has been carried out for 200 samples, but the sample size for training programmes was 120 respondents which was large number, in silk dyeing and Paithani designing by 40 and 80 respondents respectively.

3.3.2 Tools Used for Evaluation:

- Tools used for Evaluation before and after Imparting Training:
  - Knowledge rating scale: scale of 20 knowledge items was prepared (Annexure-II A,B) and advocated to the trainees to assess the knowledge they possess before training towards new techniques and change in knowledge after training. Knowledge rating scale divided into two parts i.e. A and B. The Part A was
related to 'Silk dyeing', administered in the first training and Part B was regarding "Paithani Designing" which was used during the second and third training programme.

Skill rating scale: A three point scale of 20 items was prepared on the basis of desired behaviour of trainees while learning new technique in Silk dyeing and Paithani Designing (Annexure-III A,B). Whether the trainees acquired skill in particular field or not is an essential criteria.

Attitude rating scale: Positive attitude towards learning new technique in silk dyeing and Paithani designing was necessary to judge the tendency of trainees. The three point attitude scale was prepared to assess the before and after training attitudes score.(Annexure -IV A,B)

Satisfaction rating scale: In the present study satisfaction rating scale was used to judge the reaction of the trainees based on various factors implemented in training programme.(Annexure-V A,B)

Proforma to identify the need: The training need of the trainees was defined by distributing proforma amongst the samples and their needs were identified. (Annexure-VI)

Evaluation Proforma I: After imparting the training in 'Silk dyeing', six months were given to them to adopt new technique and impact Evaluation of implementation of new technique in their routine dyeing process was assessed which reflected to true attitude of trainees. (Annexure-XIV).

Evaluation Proforma II: After implementing the knowledge regarding "Paithani Designing", six months were allotted them to adopt new technique in Paithani Designing. Their performance in the designing was assessed with the help of Evaluation proforma II and attitude was evaluated which revealed the fact.(Annexure-XV).
3.3.3 Procedure of Data Collection:

The primary data was collected by filling the questionnaire and personal interview technique, which is more effective. Since most of the respondents were poorly educated, it was decided to interview them personally. Through interview, the detailed information could be obtained, while at the same time, observation of the living conditions could also be made. Questionnaire consisted of 44 questions, most of them were of multiple choice in nature.

Researcher had visited door to door to collect the authentic information through the questionnaire. In mailed questionnaire technique there is no assurance of getting 100% response and reliable information and the experiment is deprived from the opportunity of observing the living conditions. While interviewing the respondents, the problems faced by them were discussed in detail and at the same time proforma to identify need towards learning new technique was filled up and time they could spent to learn new things were noted down.

Asking the questions from the Questionnaire, Interview were carried out and the responses given by them were noted down simultaneously. Researcher provided explanation to the questions, those were not understood by them. When the interview was conducted, the condition of the home and the resources available were noted carefully which gave the idea of living status.

The data based on the dependent variables was collected with the help of tools like Rating scales and Evaluation Proformas. As soon as the training programme came to an end, rating scales for knowledge, skill, attitude, satisfaction, overall training effect were filled by the trainees. To assess the actual implementation of new technique into their routine, the Researcher personally contacted to the trainees, conducted an interview and Proformas were filled by them.
3.4 VARIABLES UNDER STUDY:
A variable is any property trait, attribute or characteristics of some event, object or person that may have different values at different times depending on the conditions.

The present study listed down the variables, which were related to the personal, social, economic and situational activity of the trainees. The review of literature and the experience of the pre-test were considered as basis for selection of variable for the present study.

3.4.1 Independent (Predictor) Variables:
The independent variables were indicative of Personal, Socio-economic, Psychological and Situational characteristics of the trainees (Kothari C.R. 1987). The independent variables were tested for 200 samples. They were as follows:

- Age
- Education
- Size of Family
- Type of Family.
- Annual Income
- Caste
- Adaptation of weaving
- Occupational category
3.4.2 Dependent Variables:

The dependent variables studied for 120 samples i.e. 40 samples for silk dyeing and 80 samples for Paithani designing.

The dependent variables evaluated in this study, to assess the before and after training effect were as below:

- Knowledge
- Skill
- Attitude
- Satisfaction
- Training effect

(Fred Percival and Henry Ellington, 1984)

During pre-training evaluation, their previous knowledge, they possessed and previous attitude towards new techniques in silk dyeing and Paithani designing were tested and through post-training evaluation, satisfaction they gained, change in knowledge, skill, attitude and total training effect were assessed. Rating scales and Evaluation Proforma I was framed to assess those variables after imparting training in Silk dyeing and proforma II for Paithani designing with multiple choice of answers and attitude which were tested by judging the association between the behavior of the responses against the questions.
3.4.2.1 Knowledge:
Knowledge is one of the important component of covert to overt behaviour of an individual. For the present study, knowledge was operationalised as the information of trainees concerning facts and concepts related to silk dyeing and Paithani designing. Before and after training knowledge of trainees was assessed by knowledge scale for knowing effect of training. The before and after knowledge indexes (K.I) were calculated by using the formula.

Total knowledge score obtained
\[
K.I. = \frac{\text{Total knowledge score obtained}}{\text{Total obtainable knowledge score}} \times 100
\]

A Rating scale of 20 knowledge item was prepared. The scale was divided into two parts i.e. A and B. The Part A was related to silk dyeing and Part B was related to "Paithani designing". For each item the score allotted was 1. Thus the total score formed the knowledge of the trainees. The total score so obtained was converted into Knowledge Index as about and termed previous knowledge.

The trainees were categorised on the basis of previous knowledge and K.I. by using equal interval method as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate</td>
<td>0-33</td>
</tr>
<tr>
<td>Adequate</td>
<td>34-66</td>
</tr>
<tr>
<td>High</td>
<td>67-100</td>
</tr>
</tbody>
</table>

The respondent was categorized on the basis of after training K.I. by equal interval method as follows and considered as present knowledge of trainees.

<table>
<thead>
<tr>
<th>Knowledge Level</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0-33</td>
</tr>
<tr>
<td>Medium</td>
<td>34-66</td>
</tr>
<tr>
<td>High</td>
<td>67-100</td>
</tr>
</tbody>
</table>
To know the change in knowledge due to training the standard learning index (SLI) was calculated by using the formula:

\[ \text{Post training K.I. - Pre training K.I.} \]

\[ \text{SLI} = \frac{\text{Post training K.I. - Pre training K.I.}}{100 - \text{Pre training K.I.}} \]

The respondents were categorized according to SLI and described in change knowledge.

<table>
<thead>
<tr>
<th>SLI (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-33</td>
</tr>
<tr>
<td>34-66</td>
</tr>
<tr>
<td>67-100</td>
</tr>
</tbody>
</table>

3.4.2.2 Skill:

Skill is an ability to do things effectively, apply knowledge and a person's aptitude and attitudes in work situation. "Skill development is a complicated process for which a need was felt for genuine changes in the teaching-learning process. So that learners could learn according to their individual capabilities without having to bother to keeping up with the class stated by Nagi Satvindar Kaur (1992).

Since prime purpose of training is to create ability in training to put knowledge into practice, the degree of skill acquired, need to major. For the present study skill was operationalised as a sequence of action and application of knowledge in the process of silk dyeing and paithani designing. A five point scale of 20 items was prepared on the basis of desired behaviour while dyeing the silk and designing for the Paithanis. The performance of trainees was assessed during the active participation in sessions of trainee. Score '5' allotted for the exactly expected behaviour, '4' for the very good '3' for good, '2' satisfactory and '1' was further poor performance of trainees. The activity was assessed by Rating scale. The skill score of each trainee was quantified by using formula and termed as extent of skill.
Total score obtained
Skill score = ----------------------------- x 100
Total obtainable score

The total obtained score was summed up and converted into skill score. The trainees were categorized according to skill score by using equal interval method.

<table>
<thead>
<tr>
<th>Category</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not acquired</td>
<td>0-33</td>
</tr>
<tr>
<td>Adequately acquired</td>
<td>34-66</td>
</tr>
<tr>
<td>Highly acquired</td>
<td>67-100</td>
</tr>
</tbody>
</table>

3.4.2.3 Attitude:
Positive attitude is a pre-requisite for acquiring knowledge and skills. (Govinda R., 1975). In present study, attitude has been operationally defined as the tendency of trainees to respond positively or negatively regarding silk dyeing and Paithani Designing. The three point Attitude Scale was prepared and before and after training attitudes score was calculated. The trainees were categorized according to before and after training attitude.

The trainees were categorized according to before training attitudes by equal interval method described as previous attitude.

<table>
<thead>
<tr>
<th>Category</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfavourable</td>
<td>0-33</td>
</tr>
<tr>
<td>Favourable</td>
<td>34-66</td>
</tr>
<tr>
<td>Highly favourable</td>
<td>67-100</td>
</tr>
</tbody>
</table>

The attitude of trainees after training were quantified. The score was converted into percentage and labelled as present attitude and categorised as follows:
<table>
<thead>
<tr>
<th>Category</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfavorable</td>
<td>0-33</td>
</tr>
<tr>
<td>Favorable</td>
<td>34-66</td>
</tr>
<tr>
<td>Highly Favorable</td>
<td>67-100</td>
</tr>
</tbody>
</table>

To acquaint with the change in attitudes due to training, the percentage change in attitude was observed and calculated by using the formula:

\[
\frac{b - a}{b} \times 100
\]

Where \(a\) = Total obtained score

\(b\) = Total obtainable score

The trainees were categorized according to percent change in attitude.

Category (5)

0-33
34-66
67-100.

3.4.2.4 Satisfaction:

The end product of the teaching effort is the satisfaction that comes to learner as a result of solving problems, meeting a need, acquiring a new scale or some other changes in practices (Kotwal Kanchan, 1999). For the present study satisfaction was operationalised as a reaction of the trainees on different components of the training programmes. A Rating scale was prepared to assess various aspects of training as selection and presentation of training methods training aids, provided physical facilities and opinion about trainers.

The score was allotted as '5' for excellent, '4' for very good, '3' for good, '2' for satisfactory and '1' for poor.
The total score for satisfaction was quantified and the satisfaction index (SI) was calculated by using formula

\[ SI = \frac{\text{Total score obtained}}{\text{Total obtainable score}} \times 100 \]

The trainees were categorised according to satisfaction by using equal interval method as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not satisfied</td>
<td>0-33</td>
</tr>
<tr>
<td>Marginally satisfied</td>
<td>34-66</td>
</tr>
<tr>
<td>Fully satisfied</td>
<td>67-100</td>
</tr>
</tbody>
</table>

3.4.2.5 Total Training Effect:
The total training effect was operationalised as the total change in knowledge, skill, attitude and satisfaction of trainees. It was computed by using the formula.

\[ \text{Total training effect} = \text{knowledge score} + \text{skill score} + \text{change in attitude} + \text{satisfaction index}. \]

The trainees were categories according to total training effect by equal interval method.

<table>
<thead>
<tr>
<th>Category</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>94-125</td>
</tr>
<tr>
<td>Moderate</td>
<td>126-156</td>
</tr>
<tr>
<td>Adequate</td>
<td>157-186</td>
</tr>
<tr>
<td>High</td>
<td>187-216</td>
</tr>
</tbody>
</table>
3.5 RESEARCH DESIGN:

"A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure". (Kothari C.R., 1989)

In the present study, the investigator has aimed at imparting training in new technique of Paithani silk dyeing and designing for Dyers and Weavers of Yeola and to study its effectiveness by testing attitude.

Present study comprises the research design into three parts:

3.5.1 Survey of Dyers and Weavers of Yeola to know socio-economic status.
3.5.2 Imparting Training to Dyers and Weavers in Silk dyeing and Paithani Designing.
3.5.3 Evaluation of Dyers and Weavers to assess their attitude.

3.5.1 Survey of Dyers and Weavers of Yeola:

In this study the survey method was used to collect the data, with the help of questionnaire. But it is not sufficient to construct the Questionnaire and used it for data collection directly. Hence the whole questionnaire was launched for pilot study. The pilot study was carried out in khatri galli and khannpure galli. The results of pilot study showed that some of the respondents were not aware about the new techniques and some of the questions appeared little difficult to the respondents hence it became necessary to modify it. A few questions were deleted after the pilot study. Some were modified and retained. Thus, the final form of the questionnaire was constructed and it was made ready for collecting the data. The survey was conducted for 200 samples.

Researcher had visited door to door to fill up the questionnaire, by asking the questions personally to them. One questionnaire took about 45 minutes to fill up, therefore total 150 hours spent by Researcher for collecting the data of 200 samples. Yeola is 90 kms. away from Nashik. So Researcher spent about 20 days and collected the information regarding socio-economic status of Dyers and Weavers.
The information gained during pre-testing gave further direction to revise design of training plan and tools of data collection. During pre-testing suspected problems and weaknesses were rectified. The pretest group was similar to targeted population. The efforts taken for pre-testing relates to ease in design of training plan and the quality results.

- **Analysis of trainees based on Independent and dependent variables:**

  Individual differences in learning and post-training performance reflect differences in terms of factors such as age, education, income, size of family, type of family and categorywise occupation. Therefore in this research study, the data on relevant variables was collected. These were personal characteristics of trainees which were considered relevant to attend the training programmes and to gain knowledge, to develop skill and attitude, which were also helpful to score training effects.

  The effect of training was evaluated in terms of change in knowledge, skill and attitude. The previous knowledge and attitude was examined with the help of Rating Scales and the change in knowledge, extent of skill and change in attitude was judged with the help of Evaluation Proforma. After six months, the impact evaluation of trainees was done to test the attitude regarding new technique in 'Silk dyeing' and 'Paithani Designing' which showed the authentic result related to attitude for various reasons.

**3.5.2 Imparting Training to Dyers and Weavers:**

Training is the means to bring about a continuous improvement in the quality of work performed by individual. It equips trainees with necessary knowledge, skill, and attitude to perform a job. Trainee was evaluated for confirmation of the effects of experimental model i.e. training.

In the present study, experimental research design was used. In this study, the trainings worked as an experiment. The training in 'Silk dyeing' was imparted to
the trainees which consisted the Dyers as well as Weavers. Total 40 samples participated in silk dyeing training programme. At the same time, based on trainees need, 80 trainees were registered for the training in "Paithani Designing" and training was imparted successfully related to both aspects. As both aspects were different, the sample group was also different. For "silk dyeing" training the group of sample was mixed i.e. Dyers and Weavers and for 'Paithani Designing' it was purely Weavers.

Whenever the training is imparted, the training programme need to be well planned, well designed, implemented and monitored and evaluated. These are the key factors to make the training successful and most important is the assessment of the need of the trainees. This entire system approach is helpful in solving the problems. All these factors were studied under the system approach to training

3.5.2.1 System Approach to Training:
The System Approach to Training is a problem solving process, that places the diagnosis of needs before the prescription of the required methods to achieve needs. It has five distinct phases. Each phase is linked subsequently with each other and it's own sub system.

- Training Need Assessment
- Training Plan Development
- Design of Training Programme
- Training Programme Implementation
- Training Monitoring And Evaluation.
Training Need Assessment:
Training need Assessment is the first and most crucial phase of training cycle as the training approach is built up on it. While assessing training needs, two basic questions are to be considered i.e. who are to be trained? What are their training needs?. The answer of the first question proclaims about the sample. In this study, the sample selected for the training was Weavers and Dyers and for seeking answer of the second questions following procedure was applied.

The training needs of the sample was operationally defined as level of training needs expressed by the respondents as well as intensity of needs of the training. Considering the need of sample, 120 Weavers and Dyers were assessed to know their need. Out of 120 samples, 40 enrolled for participation in the training of 'Silk dyeing' and 80 enrolled for participation in the training of 'Paithani...
designing' and they had shown their willingness strongly towards the participation in training programmes.

The real picture of Yeola was very shocking regarding the dyeing and designing occupation. The manufacturers of this world fame Paithani were deprived of the recent development in the textile field as it is assumed that handloom Weavers have no choice to modify the traditional textile. The vast and fast changes are always carried out in the cosmopolitan cities but no one try to reach to the poorer, ignorant and uneducated Handloom Weaver.

As per the fashion trends, the choice of the customer changes. If we go back in early days, it is observed that Paithani's were produced only in typical dark colours but at present, English Colours are seen in fashion. The Weavers were not able to produce light colour or perfect shades and fast colours. They realised that it is a need of an hour to learn new technique and widen the knowledge in dyeing field.

Similarly the market demand for designs is increasing. Obviously every woman on this earth feels that she should have unique sarees in her wardrobe. Paithani is not an exceptional case. Monotony in the Paithani Designs in border, pallov and butti was the serious drawback. The demand for Paithani Saree was decreased in the middle period because of the sarees produced with ditto designs and less price on powerloom in other states. Adaptation of any design is easy and possible for them because of use of various mechanism and designing techniques. So it was their necessity to have a change in designs as per the customer's liking and produce the Paithanis with attractive designs. So that demand would be increased and they would get good business.

Even if they are producing highly artistic Handloom Sarees i.e. Paithanis, which are world wide fame and Weavers those who are engaged in this artistic work are deprived from the new technology, as it is considered that handloom textiles have no right to adapt any changes whether those are related to crucial techniques used by handloom
Weavers and in designing also. It was observed that if they are to fulfill the market demand, the prime need is a reorientation in the techniques of production and adaptation of new techniques in dyeing and designing. It was their necessity to learn about new techniques to make the changes in designs and to produce quality Sarees.

To introduce new things is to unlearn and learn a good lot. It is important to build awareness regarding new techniques in dyeing and designing as Weavers and customers facing difficulty in colorfastness and demanding modern designs. Customers are paying highly for exclusive paithanis and Weavers are failing in satisfying the customers demand and could not give the guarantee of color.

Today's need is to adopt new technology and try to make fusion with modern things, which are very much demanded in the fashion world. This is the moment, that Dyers and Weavers of Yeola awakened and they felt that they must change their traditional methods and try to acquire new or recent methods to compete the global market.

The trainees realized the need and enrolled for the training programmes. To identify training need a 'Proforma' (Annexure- VI) was distributed and their needs were identified and accordingly the trainees were distributed for training in 'Silk dyeing' and 'Paithaini Designing'.

● Training Plan Development:
The success of any Training programme is dependent upon meticulous planning, proper implementation and objective evaluation. In short, the Training programme has 5 major aspects viz.

- The Trainer or The Instructor
- The Trainee or The Learner
- The Training Methods, Technique and physical facilities
- The content or the subject matter
- The total impact of Training programme (Bhatnagar O.P. 1987)
After assessing the need of trainees, interest to learn new technique, willingness to participate in training and change in mind set up, Researcher planned the training programmes in such a manner which fulfill the objectives.

- **Training Programmes were Planned under Three Phases:**
  - **Ist Phase:**
    The first training programme was planned in 'Silk degumming and dyeing'. We see always eye catching textiles in the market, their attractiveness is depend upon the raw material used in it. Raw material used for Paithani is 'Silk' of different variety. The preparatory processes carried out on 'Silk' are very important which gives brightness, luster, shine and strength to it. Proper and scientific method of degumming is necessary which improve the dyeing quality of silk, producing fast colors.

    At the same time, use of Eco-friendly dyes i.e. Natural dyes are considered important, as some synthetic dyes are banned in foreign countries. Whenever there is need to export the Paithanis or such demand from customers, Dyers should have knowledge of the technique of dyeing, with new emerged dyes. So researcher identified need very scrupulously and planned the training programme in 'Silk dyeing'.

  - **II Phase:**
    Paithanis are traditionally famous textiles of Maharashtra and Weavers are trying to revive the tradition of designs, colors, and technique of weaving. On the contrary, in this globalization, if anybody wants to survive, will have to change or modified their practices or methods they use. As on today the customers at home and abroad are demanding for innovative and creative products which may be the fusion of tradition and modern techniques. It is mandatory to fulfill the demands of the market, for the survival of the Weaver. So it is imperative for the survival of 'Paithanis', the Weavers should cater to the changing taste of the modern day without sacrificing the artistic standards of their products. They
should retain the old and blend it with new things of their own inventions. So training in the techniques of production has to be imparted to the Weavers. What he knows today is only the traditional methods, which are in many cases outmoded. But as modernization is so important for the survival of handloom Weavers, a training in the application of new techniques and tools need to be imparted to the Weavers, particularly the young.

Hence Researcher planned 2nd training programme in "Paithani Designing" to make them aware of new technique in designing with Dobby and Jacquard Mechanism.

**IIIrd Phase:**
As mentioned above, As far as the design is concerned, it is true that paithani specializes in motif Asawali, Paroot and Peacock, but adaptation of new designs for pallov, body and butti is necessary with considering today's change in trends and to compete the domestic and export market. The trainees were badly in need of training in designing to come out of the problems in designing so the number of trainees was more. To acquaint with the new and scientific technique, to avoid crowdness, the 3rd training programme was planned in 'Paithani Designing'. So that the trainee could get proper and indepth knowledge and trainer could pay the attention to everybody.

Hence the total three programmes were framed scrupulously for 3 to 4 days in 'Silk dyeing' and 'Paithani Designing'. This way the training programme plans were developed. But the good training plan must consist the following elements, which were considered at the time of planning.

They also realized the need to study new techniques as there are many imitations of Paithanis from other states in the market and their sale price is less than Paithanis, as these are produced on power looms. General customer is not aware of it and to compete with such sarees, new-new changes in traditional one is very
important by reviving the tradition. So the exposure given to them was very important as far as the quality, price and their survival is concerned.

- Factors Which are Important in Training Plan Development:
  - Training Plan:
    For the present study, short term training programmes were formulated. Due to heavy dyeing and weaving schedule, it was difficult to them to spent longer period.

  - Training Policy:
    Considering the needs of trainees and discussion with the experts, training policy was finalized to train them in the new technique of 'silk dyeing' and 'Paithani Designing'.

  - Target of Productivity:
    Training programme in 'Silk dyeing' was targeted to maximum 40 participants and in Paithani designing to maximum 80 participants.

  - Training Results:
    Participants will learn the new technique in 'Silk dyeing' and 'Paithani designing' which will improve the quality and beauty of the Saree and they will compete with market demands.

  - Training target group:
    Trainees enrolled for the training were from various age groups from Yecola and Nagade Village. The group of 40 participants were made for silk dyeing and two groups of 40 participants were made for training programme in 'Paithani designing'.

  - Training Programme:
    As per the trainees, training programme period, mode, schedule and dates were finalized. A time schedule of training programme is illustrated in (Annexure-VII A,B,C)
Training Finance:
Training programme cannot be organized and implemented without availability of adequate and timely funds. Therefore, the estimated budget of the three training programmes were prepared well in advance. The entire finance for all training programme was supported by Researcher.

Training Fee:
Any Institute or agency had not sponsored the training programme, hence a nominal registration fee was charged to meet the expenditure to be incurred and the researcher had shared the remaining expenses.

Trainee:
Trainee plays very crucial role in effective learning through the training. Selection of the trainee was done meticulously after assessing the required knowledge in that field, attitude and willingness and interest of the trainee. The proforma of Registration form for training is illustrated (Annexure-VIII).

Supporting training materials:
For training programme in silk dyeing, Dyes and Chemicals were sponsored by Weaver's Service Center and silk required for dyeing is obtained from the Weavers. For training programme in designing, the graph paper of particular count is got printed from solapur well in advance and stationary required is provided as per the necessity. List of supporting training material is mentioned (Annexure-IX).

Training Responsibility:
A formulated training plan is essential for preparation and implementation of training programme under which the responsibilities of trainer, group leaders and In-charge of self Help groups were specified clearly and conveyed to them.
Design of Training Programme:
The Design of Training Programme consists training objectives, training methodology, Training technology, course material, Training schedule.

Training Schedule:
Total 3 training programmes were scheduled mentioned as below.

- Training in Silk dyeing.
- Training in Paithani Designing for Group I.
- Training in Paithani Designing for Group II.

As the sample size for 1st training i.e. 'Silk dyeing' was 40, controllable group so only one training programme was designed. But for Designing, sample size was double i.e. 80. So two groups were made of 40 trainees and two training programmes were conducted. Training schedule planned for all training programmes were of 3 to 4 days duration.

Training Objectives:
Training objectives enables the trainer to design the learning experiences to sound professional lines and provide appropriate criteria for evaluation. Training objectives were framed on the basis of training needs and overall level of understanding of the respondents and finalized after the discussion with experts.

Training Technology:
Training aids can increase and reinforce the training. To make an enduring exercise, supporting material were developed simultaneously as training input.

The following material were used as training aids, charts, Designs on graph papers, Shade cards, Photographs, Chalk board.

Course Material:
Course material is required to be special developed for a particular training
programmes keeping in mind the requirements of the trainees. As the target group knew only Marathi language, course material was prepared in Marathi language and distributed to all participants.

Manuals for "Silk degumming and dyeing" (Annexure-X) and "Paithani designing with Dobby and jacquard" (Annexure-XI) were prepared in Marathi language specifically for Weavers and Dyers. Manual for "Silk degumming and dyeing" gives the knowledge about new technique in degumming and dyeing procedure, calculations to be done as per percentage shade, chemicals to be used, proportion of water and chemicals, test of P*, achievement of various shades by mixing two colours, and costing of dyeing.

Manual for "Dobby and Jacquard Designing" gives the knowledge about entire procedure of designing of butti, border and pallov which needs the calculations, enlarging the design, application of binding of the various weaves, stepping to the design and card punching for jacquard and pegging lattices for Dobby and costing of designing.

**Training Programme Implementation:**
Training needs assessment, development of training plan and design of training programmes is followed by the next phase of training cycle i.e. training programme implementation. Training programme implementation is very crucial stage. Planning and designing is easy but actual implementation is difficult task. Various factors affect the implementation such as response of the trainees at the time of actual conduct, time schedule to be followed by trainees, discipline to be maintained and active participation of trainees.

In the present study, knowledge of new technique was imparted by conducting the various training programme at Yeola. Total three training programmes were conducted to give exposure to Dyers and Weavers regarding new technique in dyeing and designing.
Two phases are important in implementing the training programmes.

I) Preparation

II) Implementation.

**Ist Phase - Preparation:**
Planning enables to prepare for conducting a training programme. An effecting training design needs pre-training contacts with participants. Effort was made to extend invitation to perspective participants to participate in training programme. Therefore a invitation card and brochure of training was prepared. Invitation cards were given to the invitees and brochures were circulated among the participants in (Annexure-XI, A,B,C). The information was also disseminated through local newspapers. (Annexure-XII)

**Preparation of Time-Table:**
Time table is the line of action in logical sequence determined consciously in advance. On the basis of designed training programme a schedule of activities was prepared. A programme scheduled was prepared considering requirement of learners. Meeting for finalizing the arrangement first meeting was organized before finalising the plan of training programme. A final winding up meeting was held on the previous day of the training to ensure the preparation of training venue and supporting arrangement.

**Ist Phase - Implementation:**
Training programmes implemented in the present study were:

✓ Training in 'Silk dyeing'.
✓ Training in 'Paithani Designing' for Group I and Group II.

The training plan was well prepared and implemented as per plan.

✓ Training in 'Silk Degumming and Dyeing':
Actual conduct of the training in new technique in 'Silk degumming and dyeing' was carried out in the month of December, 2001 for 3 days from 27th December
to 29th December, 2001. The duration for training programme was adequate for degumming and dyeing activity. The time schedule for training programme was 10.00 am to 5.00 pm. Considering the need of trainees, total 40 trainees were enrolled for this training programme.

On the 1st day of training Inaugural function was arranged and training was continued with lecture cum demonstration on silk Degumming. After the lunch break the trainer explained about importance of dyes, colorfastness and dyeing procedure of silk with natural dyes. Actual demonstration was carried out by the trainer and trainees also participated in this experimental work.

On the 2nd day lecture on degumming process, dyes, shades, referring the Shade card, mathematical calculations for dyeing includes amount of dye to be taken, chemicals, water, test of pH, temperature to be controlled was delivered and all the factors were explained to them very carefully. Under actual demonstration the dyeing of silk with various colors/shades and various shade percentage was carried out with acid dyes which resulted into very brilliant colors. On the same day, trainees achieved the red color to silk yarn seen in 50 years old Piathani, which they could not achieved before even with lots of efforts. This efforts had succeeded through training programme. All the trainees participated very enthusiastically.

On the 3rd day the difficulties regarding degumming, dyeing, achieving light shades, Pallov bleaching and redyeing, costing criteria was discussed by the Weavers and Dyers with openly and there was an interaction between Trainees and Trainer. Total 15 Kg. of silk was degummed and dyed with acid dye and natural dye. Along with this effective output, training programme was concluded by expressing their views very positively which encouraged the trainees to participate and enhanced the need of such training programmes.
Plate No. 32: Training in "Silk Degumming"...

Plate No. 33: Training in "Silk Degumming"...

Plate No. 34: Training in "Silk Dyeing"...

Plate No. 35: Training in "Silk Dyeing"...

Attitudes towards New Techniques in Dyeing and Designing among the Paithani Weavers of Yeola.
Training in Paithani Designing for Group I:
The another effort had been carried out by researcher was implementation of training programme in new technique in 'Paithani Designing'.

The 2nd training programme was conducted in November, 2002 for 4 days duration. Designing being most skilled job, extra time was alloted for the first training in Pathani Designing. The total number of trainees for this training programme was restricted to 40 as it is a skilled, technical and creative work. Individual attention is very much important as far as the designing is concerned.

On the 1st day of training after Inaugural function, the Researcher explained the designs of basic weaves and mathematical calculations required for designing to the trainees, which were very important in designing aspect. It was noticed that trainees were not even aware of twill and satin weaves except plain weave. After lunch break, designing with the help of Dobby mechanism was taught to them. Dobby designing is important in making designs for border.

On the 2nd day, same exercise was continued as they were not proficient in this type of work. Drawing a design for border, enlarging on graph paper as per the size of lattices used, giving the bindings in the design with various weaves, and finally transferring the graph paper designs on lattices by fixing the pegs, was exercised by doing actual practical work throughout the 1st session of 2nd day of training.

In the 2nd session, trainer explained them about the Jacquard mechanism and important points needed to be considered for jacquard designing i.e. calculation for count of graph paper, size of Jacquard depending on the number of hooks, enlargement of design on the graph paper as per the size of Jacquard, bindings of the weaves considering the float of design, stepping the design, transferring design on cards, punching the cards as per design etc. To make them aware of all above elements, researcher gave step by step demonstration and tried to implement the knowledge of butti design with the help of Jacquard mechanism.
On the 3rd day, trainees practiced making the designs for buttis and punching the cards for Jacquard. In the 2nd session, the designing for pallov was taught to them. Adopting the various designs with the help of Jacquard is easier than tapestry weaving. These days most of the part of the pallov is woven with Jacquard mechanism but they were not knowing the designing for Jacquard, with the help of which accuracy of design, balance of design can be maintained and as well it is time and labour saving. In addition to this Meena work in designing was also taught to them.

On the 4th day, in the 1st session, the various designs were practiced for Pallov until the perfection is achieved. The doubts regarding designing were discussed in the 2nd session and training programme was concluded with views expressed by the trainees with satisfaction and feeling of achievement of new technique which will be definitely beneficial to them in future. For this training, samples were purely Weavers.

Plate No. 36: Stepping the Jacquard Design...

Plate No. 37: Colouring the Design...

Plate No. 38: Punching the cards for Butti Design...
Training Programme in Paithani designing for Group II:

The 3rd training programme was conducted at Yeola for remaining 40 samples in December, 2002 for 3 days duration. The reason for shortening the duration than previous training programme was, amongst the 40 samples who were trained in the second training programme, out of them, 10 trainees were ready to guide present group along with the Researcher. Four groups of 10 trainees were made out of 40 samples and trained group leader headed the group which helped in understanding the concept well. As such it became easy in implementing the knowledge of designing within three days.

The schedule of teaching was same as per pervious training programme in designing. All the topics like Dobby, Jacquard Designing, pegging the actual lattices, punching the cards were taught to them. At the end of training Researcher tried to overcome their problems in designing during feed back session.
Factors Which are Important in Implementation:-

Arrangement for reception of trainees:
In the beginning, the trainees were welcomed by the receptionist, who then collected the registration forms filled by trainees and handed over training material to them.

Feedback from the trainees:
Feedback facilitate to improve the quality of training. The feedback from the trainees was most valuable. Therefore some informal questions were asked to the trainees. Answers of the questions from trainee were indicative of the effectiveness of the training.

Training Environment:
Training environment, a part of the implementation, was created and experiences of the participants regarding dyeing and designing were discussed openly.

Training Monitoring and Evaluation:
The last phase of training cycle is Training Monitoring and Evaluation. This phase was concerned with the Management and inferences from the result of the training endeavored with a view to assess whether the objectives of training had been attended or not? Training Monitoring and Evaluation consist of two sub-systems:

Training Monitoring
Training Evaluation.

Training Monitoring:
The basic objectives of training monitoring was to keep all concern within training environment, informing that the training activities would be proceeding as planned. If there is any deviation from the plan course, the nature and extent of deviation that required for setting course in right direction is to be
decided,(Deshmukh A., 1999). The trainee is concerned only with results of training. In this study Training Monitoring indicators were defined as specific and objectives measures of changes or results brought out by an activity.

Training performance is a matter of continuing the trainers participation utility and effectiveness.

Training Participation Index:
Training Participation Index was calculated to the rate of participation in training programme by using the following formula:

\[
\text{Training Participation Index} = \frac{Ta^{'}}{Ts^{'}} \times 100
\]

Where,
\(Ta^{'}\) = Numbers of trainees attended the course.
\(Ts^{'}\) = Numbers of trainees slotted for the course.

Training Utility Index:
Training Utility Index was calculated to evaluate usefulness of training to trainees decides the usefulness of training to them which was calculated as:

\[
\text{Training Utility Index} = \frac{Te^{'}}{Ta^{'}} \times 100
\]

Where,
\(Te^{'}\) = Numbers of trainees who found training course useful.

Training Effectiveness Index:
Training effectiveness index was calculated to examine the effectiveness of the training programme which was calculated as follows:
Training Effective Index = \( \frac{\text{TEI}}{T_s} \times 100 \)

Training Evaluation:
Training Evaluation means an attempt to obtain the information on the effects of the training programme and to assess the value of training and to test the change in attitude, (Fletvher M.R., 1981). No training programme could be said to have been organised completely without training evaluation. Training evaluation was carried out with the help of Rating Scales to assess Knowledge gained, skill acquired, their attitude towards new techniques and satisfaction they received.

A simplified system approach to Course Design

(Fred Percival and Henry Ellington, 1984)
3.7 POST - TRAINING EVALUATION:
Evaluation is an activity which is concerned with project, effects and impact. Training evaluation means an attempt to obtain information on the effects of a training programme and to assess the value of training in the light of that information (Patel U., 1997). No training programme could be said to have been organized completely without training evaluation. Training evaluation can helped in sharply for defining the training contents.

After imparting the training, the post training evaluation was carried out, to assess their performance and a change in attitude. The impact of any training can be known only after the longer duration and not immediately after the training. The Post Training Evaluation is of two kinds- one which takes place immediately on the termination of the course and the other which is conducted after the trainees have been placed in their field situation.

In the present study, both kind of evaluations were carried out to get a authentic attitude. The evaluation of trainees was done immediately after the training was imparted and the change in knowledge, skill and attitude towards new technique were tested. And accordingly the participation index, utility index, effectiveness index were calculated. The another method of evaluation was carried out after longer period to judge the true implementation of new technique in their routine.

3.7.1 Impact Evaluation:
In the present study, the evaluation was carried out after six months which helped to assess the usefulness or efficacy of the training. The reaction of trainees towards any new approach is important. The continuation of a new approach depends not only on it's effectiveness but also on the acceptance by the learners. It is not surprising that whenever a new practice sound for adaptation, it may fail if the community happens to have, in general a definitely unfavorable attitude towards it and resists it's adoption. Hence the reaction towards new
approach becomes an important criterion for validating an approach concluded by Fletcher, M. R. (1981)

As far as silk dyeing is concerned, practice with new technique, procurement of dyes and chemicals and actual implementation on large scale is a lengthy process. The time is required to change the traditional mind set up. So Evaluation was carried out to test change in attitude in particular, after six months to get authentic result.

Adaptation of new technology into regular routine easily, is difficult task. As far as the designing is concerned, preparation of design, fitting into the scale, transferring it on actual woven samples, is time taking process, besides their busy weaving schedule and seasonable demand. So the two months were given to them for creating new designs, two months for actual fitting into the scale, transferring on to the cards / lattices and two months for actual trial on the woven samples.

In the present study, the research was based on attitude objectives and the attitude was measured by Evaluation Proforma - I (Annexure-XVI) and Evaluation Proforma - II (Annexure-XV).

After implementation of the new techniques in regular practices, their change in attitude regarding new technique taught to them was tested, by judging the association between the behaviour of the responses against the questions through the Evaluation proforma. To test change in Knowledge and skill acquired and attitude after immediate termination of training, rating scales were used. To conduct the post-test, evaluation proformas were got filled by them to test their attitude, acceptability towards the new technique in silk dyeing and Paithani designing.

Those who have got higher score were felicitated by awarding certificates by MSG research center, G.E. Society, Nashik.
This is sure that the training in "Silk dyeing" and "Paithani designing" improved the Dyers and Weavers attitude towards accepting new technique taught to them. By this means, Researcher will hope to see some tangible changes among them:

- Acceptability of new techniques in their routine
- Improvement in the techniques used by them earlier
- Increase in learning new concepts and add to the knowledge
- Improvement in the quality of the product
- Change in attitude towards positive extreme with better performance and satisfaction.

This type of most detailed objective have in essence, said, "From their many behaviors and Evaluation proforma indicate their attitude towards new techniques".

The researcher felt that changes will convince that the training program has had an impact on Dyers and Weavers and change in attitude towards new techniques in 'Silk Dyeing' and 'Paithani Designing'. The researcher has evidence of their acceptance of their attainment, in the form of actual samples of dyed silk and woven designs.
The implementation process is shown in the following model:

Implementation And Acceptability of New Technique after Imparting Training