

HANDWEAVING TRAINING MANUAL

Editor
SEISHI KATO



NATIONAL REHABILITATION CENTER
FOR PERSONS WITH DISABILITIES
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The National Rehabilitation Center for Persons with Disabilities was designated as the WHO Collaborating Centre for Disability Prevention and Rehabilitation in 1995.

The terms of reference are.

- 1 To research and develop technologies for primary health care to maintain health condition of persons with disabilities (PWDs) and health, medical, and rehabilitation services to prevent and alleviate disabilities.
- 2 To develop technologies for the improvement of social skills and promotion of economical independence in collaboration with PWDs.
- 3 To study and develop social systems for PWDs, such as primary health care, social care, etc., in the community.
- 4 To research and develop affordable assistive products and its service, in collaboration with PWDs.
- 5 To prepare manuals for education and training of professionals in health, medical, and welfare services for PWDs.
- 6 To conduct training programs, conferences, and/or seminars on rehabilitation of PWDs for dissemination of technologies and information.

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Editor: Seishi KATO

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Fumio Eto, M.D., Ph.D., President

4-1 Namiki, Tokorozawa City, Saitama Prefecture 359-8555, Japan

Tel. 04 (2995) 3100

Fax. 04 (2995) 3102

E-mail whoclbc@rehab.go.jp

PREFACE

The Training Center of National Rehabilitation Center for Persons with Disabilities (current Rehabilitation Services Bureau) has been providing various vocational trainings targeting persons with disabilities with a view to employment. One of them is the handweaving training using looms. It is called SAORI, which aims not only to teach handweaving skills to create woven fabrics of a fixed design, but also to bring out the individuality of the persons with disabilities and to encourage independence, considering handweaving as one of the means of self-expression. Although it is rare to be chosen as a training subject in this Center after transition to a new administrative structure following the enforcement of the Services and Supports for Persons with Disabilities Act, this training has been conducted for not only persons with physical disability, but also for persons with visual disability, hearing disability, internal disability, higher brain dysfunction, and further, people with multiple handicap of such disabilities, and has produced a lot of successful results. As the targeted persons have various disabilities, it has invented various approaches according to each type of disability. This manual was created aiming to help the training of people with various disabilities by providing as much know-how as possible we have cultivated in the past.

WHO has cited a provision of opportunities to earn a living to the people with disabilities in developing countries as one of the major goals of “Community-Based Rehabilitation: CBR,” currently promoted by WHO. It is easy to introduce SAORI to these developing countries as they have also been practicing handweaving of their own as a traditional technology. Furthermore, it not only encourages people with disabilities to become independent, but could also lead to earning a living independently, as the work they have woven by SAORI method has value as a commodity. That is to say, SAORI can be an effective tool to realize CBR. A rehabilitation center in Thailand has already introduced the training of SAORI as a part of CBR program. I hope that this manual will be of help to the people not only in Japan but also in many other countries in introducing SAORI into their trainings for the people with disabilities as a means to become independent and to participate in society.

S. KATO

EDITOR

Seishi KATO

National Rehabilitation Center for Persons with Disabilities

CONTRIBUTOR

Shizue AKIYAMA

National Rehabilitation Center for Persons with Disabilities

ILLUSTRATOR

Satomi SHIKE

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Contributor

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Introduction

The handweaving training of National Rehabilitation Center for Persons with Disabilities (hereinafter, “NRCD”) is mainly conducted using the SAORI method. SAORI is the handweaving loom originated by Misao Jo, or the concept of the handweaving that uses this loom. Ms. Misao Jo, the founder of SAORI, was born in Sakai City, Osaka, in 1913, and now she is 98 years old. She founded SAORI at the age of 57 and her concept has been widely accepted as means of artistic activities and social participation for persons with disabilities. The concept of SAORI is not to produce an article but to think through the act of weaving just like writing poetry or painting pictures using threads as paint colors. It regards weaving as a means of self-discovery and self-expression; it does not teach, but brings out the sensitivity each person has born with, maximizes and creates the wonder of individuality, while respecting the process of weaving.

The fun of handweaving with the SAORI concept will give the users of vocational training service of NRCD (mainly people with disabilities) a clue to think about the future and take a step forward toward the future. In the course of handweaving training for people with disabilities, supporters will notice the changes in the statements and behaviors of the users, and will be able to help bring out their true nature and become independent in their own ways. The users themselves will also find a chance to take positive steps, notice the meaning of being independent, and eventually visualize the self-actualization.

The targets of this handweaving training are persons with disabilities, especially physically-disabled persons including hearing disability, visual disability, internal disability, higher brain dysfunction, and persons with multiple disabilities. Also, I must add that it is the characteristic of NRCD to have many users participating in the training who are living in a dormitory away from their families and friends.

This manual outlines the training that has been conducted focusing on the problems attributable to the physical disabilities, by making the most of the significance of the SAORI concept through the handweaving training at NRCD. We hope you find this informative with the fact in mind that the explanations are given at the site where users with a variety of disabilities are actually participating in the training.

Chapter 1.

Training Using Handweaving

The handweaving training of NRCD is centered on SAORI handweaving.

As I introduced in the beginning, SAORI is a cultural activity of self-expression, a way of expressing individuality, a concept “to live in our own style,” i.e., “the whole way of life.” The handweaving training involves opportunities and elements to reflect on ourselves, self-choice, and self-actualization repeatedly through the hand-weaving. What we can do now, what we can do with a little effort, what we should consider as a future goal—these thoughts will lead us to reflect on how we should live and to frame an idea for the future through hand-weaving. In the process of accumulating experience through handweaving, we can see the users’ words and behavior make a positive change. It seems that capturing of such changes can be an important clue for supporters to know the timing or point to bring out the potential of the persons with disabilities to become independent.

Users of vocational training service who become more positive have a favorable influence on other users around them. They will build a sense of fellowship and play a leadership role in the group to act together, and set off on their own path toward the future.

1. Characteristics of SAORI

1) Characteristics of traditional textile manufacturing

Various types of looms have been used and various types of cloth have been woven all over the world. There are traditional textiles in various parts of Japan, too. But it is not easy to start weaving as it takes a long period of time to pass down the traditional skills and to gather knowledge including the problem of obtaining materials. Traditional looms are usually large in size and there is a premise that certain rules and standards handed down must be observed. Their qualities and designs are already determined before weaving. They require strained continuous work, much concentration with no margin for error and ultimate techniques to maintain qualities and standards based on the carefully thought-out plan of the design. Such high-quality meticulous work requires delicate hand work, physical strength to dash off the work, and consistent quality of hand work as premises. Minor mistakes such as weaving irregularities or twisted threads are regarded as a flaw that reduces the value of the fabric, which are not accepted in the economically-oriented society. For persons with disability, it is a very challenging task and there is a hurdle to overcome that requires body strength, ability to concentrate, skills, etc. to stick to the original schedule by understanding, planning, and performing the design by controlling themselves, to proceed to meet the standard.

2) Characteristics of SAORI

In SAORI world, weaving is one of the means of self-expression, not to pursue technology, nor to weave according to a sample based on predetermined design and standards.

When you have decided a rough design and size, start warping to prepare for weaving. Remember that even a flaw of fabric can be regarded as a variation of patterns. It defies existing standards and stereotypes, such as, the edges must be neatly aligned or it has to be woven evenly. It is free weaving to

express your true self.

It is weaving to enjoy weaving itself and there is no idea of failure. It is a big-picture thinking with no standards like something must be such and such, therefore, frayed or loosened threads or taking wrong steps can be an interesting effect that adds human warmth, rhythm, and personality. Such thinking is useful for mental health care and gives a chance to experience that lead to self-acceptance and self-actualization, and is widely accepted by persons with disabilities as well as elderly people. Combined with the ideas of improvement of QOL (quality of life) and normalization, it has become popular as an effective way of social participation, to reflect on oneself and self-expression that helps to become independent.

3) SAORI for persons with physical disabilities

The concept of SAORI has characteristics that it is easy for persons with disabilities to challenge. Especially, free-wheeling thinking in the weaving process makes persons with disabilities to explain themselves easily. Users can accept challenges attributable to the disabilities as they are, and most of the time they can work like their regular self, thinking disability as a part of personality.

Listed below are characteristics of SAORI compared with the fabrics of general brand from the perspective of considering people with disabilities. The images of users here are persons with physical and multiple disabilities including persons who need care and support in terms of mental, cognition, memory, strain, disability acceptance, anxiousness, etc., and it is group training.

- (1) Weaving loom and handweaving tools are designed to be easy to use for persons with disabilities.
- (2) With SAORI, users can select yarns and materials most comfortable to use.
- (3) The process of weaving is easy to understand and easy to work.
- (4) It does not stick to the schedule. No need to keep the schedule and can work freely
- (5) Able to take in new ideas and individuality along the way
- (6) Even when they take wrong steps or cut the yarn by mistake, they can continue weaving.
- (7) As there is no idea of flaw, failure, or starting over, they can do a lot of work and can gain a sense of accomplishment.
- (8) As there is no sample or model, they don't need to fit their thoughts and skill to standards.
- (9) Users are not forced to compete or criticized as it aims at self-expression and is self-driven.
- (10) Those whose body strength or physical condition are not stable, or have a low tolerance for stress, can work at their own pace.
- (11) Able to continue weaving even when they can't keep motivation or are irregular in work.
- (12) Because the work process moves step by step, the time to lay down guidelines is clear that makes it easy to set the timing for self-decision.
- (13) Able to develop ideas into commercialization of the woven cloth by tailoring them into mufflers, skirts or whatever, as they can decide how to use them.
- (14) Applicable to the work of persons with visual disability by using the sense of touch.
- (15) Different from machine weaving, in which work is sub-divided, even persons with visual disability or intellectual disability can feel the process, where a yarn is woven into a cloth, and can understand the flow of work.

2. Actual Support

1) Support the work of persons with physical disabilities

(1) Point of support in SAORI process

① Weaving process: Require less support

They can freely proceed with the process of SAORI weaving if the weaver understands how to operate the loom and the surrounding environment is properly designed and adjusted considering disability. It does not require much support.

② Process from warping to tie-up: Requires support

In SAORI weaving, organizing the warp threads and putting them onto the loom accounts for the most part, except the weaving process.

This process requires knowledge and consideration for the intended use and the user, such as broad plan, calculation, colors and materials, and texture and feeling. Through the training, we consider whether or not they need support, the contents of support, and how to support. The focus of support is to increase the part of self-choice, self-decision and self-driven, as well as to adjust the surrounding environment so that the person will be able to work independently.

(2) Example of support in SAORI weaving

Example 1: Help persons with visual disability to check colors and images

Example 2: Help persons with physical disability in the part or process that requires delicate hand work

For these tasks, we adjust the surrounding environment by using the manual described below.

When it is hard for a person to work independently because of the condition of hands and fingers after passing through this stage, we review the content of support, readjust the surrounding environment, and consider ways to proceed by requesting cooperation of the people around. If necessary, we provide support involving people around.

2) Four processes of support

Almost all the users with disabilities will be able to work by themselves. However, there are users who lack in knowledge/experience due to the disability occurred in early childhood, persons who need support in terms of sense and cognition, communication, understanding, and memory. We divide support into four processes and consider which process trainee needs support, if support is required in several processes, we have to consider where to place priorities.

(1) Process 1: Sensory input (Help collecting visual/audio information)

① Support in collecting information, observation tour, experience, etc.

A person who can't see, can't visualize by words, or can't understand the loom, needs help to acquire knowledge or in image-building. Users will be able to build an image with assistance in collecting information, observation tour, experience, etc. Such support is deeply related to the degree of need and motivation for handweaving, and that can be a chance to participate in the training or to encounter with handweaving.

For users have little information, we provide as much information as possible according to the condition of disability. For the users who wrap themselves up in suspicion, new information

becomes a good chance of self-selection and to know a new world.

To be exposed to the training environment where there are people in the same situation and same disabilities, and to have opportunities to listen to other's opinions and impressions, can be an important part of collecting information.

② Adjustment of the amount of information/Relaxation of the stimulus

As it is group training, when the users feel pain because of stimulation from the surrounding environment, supporters help the users by releasing the source of the stimulus, such as, by adjusting the amount of information, blocking the stimulation from around, or by securing a personal space for training. For example, set up a comfortable environment to maintain good concentration by using partitions, or sunglasses for light, blinds, and headphones for sound stimulation.

BGM, harmonious sound, and aroma can be a nice tool to produce an effect to reduce the stimulation.

(2) Process 2: Understanding (To understand; Help organize and absorb the information)

The point of support is to find the reason why users don't understand. Also make a support plan so that the users can maintain a stable state of mind and continue concentrating.

① Example: When they don't understand because they can't organize so many information

Support: Subdivide a large task into smaller tasks or take small step approach

② Example: When they cannot work for a long time

Support: Select a task that gives a feeling of accomplishment in a short time

Present a clear vision of time and task.

③ Example: When they feel anxiety as there is no end in sight or have no clear prospects

Support: Help them understand the time and progress by assigning a short time task, then present the next task, work process, and work flow so that they can see the end of the work.

(3) Process 3: Memory (Support to maintain what they felt or learned)

① Help them take note or record of what they learned, and let them know the meaning of using records.

- a. Record what they worked in that day, episode, etc.
- b. Consider the use of video recording tools according to the condition of disability.
- c. Use the procedure manual or sheet that describes elements of memories.
- d. Also use the sheet for sensory memories and visual memories.
- e. Systematically organize the items and contents of what should be memorized and make good use of them in assistance.
- f. File them in a pocket file to use as reference materials eventually.
- g. Repeatedly make them aware that the records are useful to save memories.

(4) Output (Help them carry out weaving work and express what they learned)

- a. Introduce a wide variety of materials and colors that they can freely work with, including materials other than yarns.
- b. Help them change thickness within a scope that does not pose any problem in the weaving process.

- c. Adjust the surrounding environment so that they can work in their own style and with a lot of choices.
 - d. In order to lead them to understand more deeply what they noticed, give tips for ideas and devices that defies stereotype at the right time, and illustrate with examples.
 - e. Important point is to speak to or communicate with them to lead them to the concrete expression.
- (5) Effects of setting a place to introduce and appreciate their works

We provide a place to talk to each other about what they thought and how they changed their thoughts during work process. It has become a place to notice the difference of communication means according to the condition of disabilities, to understand each other's personality, to build relationships, and to feel of familiarity.

3. Potential of Handweaving Training

1) Case 1: Visual disability

(1) Profile

- ① User who has now become totally blind due to visual impairment caused by diabetic retinopathy in adulthood.
- ② Does not need support for the intellectual aspect and memory retention.
- ③ Male, 30s
- ④ Problem is disability acceptance

(2) Four processes of support and actual support

① Sensory input (Help collecting visual/audio information)

As the person in the Case 1 used to use visual information until adulthood, he knows the shapes and colors of looms and textiles; therefore, he sufficiently understands verbal explanation. He can make a good guess about the image and process of weaving through the sense of touch when he faces the loom by adding the real experience to what he had experienced before.

② Understanding (To understand, help organize, and absorb the information)

When he starts working, let him touch as many works as he wants and feel the size and texture. Then, help him visualize what he wants to make by touching or by explanation given in language, select, and start weaving by using the hint perceived by the sense of touch. Always keep the information to check by the loom, such as weaving density.

Confirm the dimensions by using scales and measures for persons with visual disability, as well as the position and size of tools and materials around the loom and the pattern arrangement by using the body scale. Promote understanding using paintings, poems, stories, and the knowledge acquired before, as a medium.

When he can't visualize the sense of length, etc., we use cards, strings, or unique yarns so that he can easily measure it by touching.

The user himself cannot visually confirm how the work looks during working. Tell him many other people's impression of his work so that he can accept, digest, and absorb them and understand the general evaluation on the cloth he is weaving.

③ Memory (Support to maintain memories on how he felt and learned)

Record the memories by using the point system, audio recording, etc. The user can judge and organize the memory items himself.

④ Output (Help him carry out weaving work and express what he learned)

At this stage, the user has comprehensively understood the name of work, the contents and process of work, and the flow of work. Making use of the ideas and inventions of the user himself, organize the points and ways to request for cooperation and support from the people around, and provide support focusing on the arrangement of surrounding environment. Prepare colors, etc. if actually requested by the users, e.g., colors of fruits or plants. To listen carefully to the comments, suggestions, and requests through the training, and incorporating suggestions into the training will be of some help for the other users including people other than people with disabilities.

⑤ Effects and development after providing support

As a result of the training to obtain the visual information by communicating with others, the users will enjoy knowing how it can be communicated through the other persons' visual sense and feelings, will accept them as a new experience that prompts speculation, and will expand their horizon toward appreciation of paintings, photographs, etc. There are other similar examples; a person who obtained touch/olfactory information of the trees and flowers in nature appreciation, continued handweaving at home, and now takes orders from the people around; a totally blind person who displays and sells his works at galleries; a deaf blind person who regularly introduces his works that results in sales while conducting awareness activity for understanding and cooperation to the disabilities. These people with disabilities are participating in various activities according to their life cycles.

2) Case 2: Physical disability/Higher brain dysfunction

(1) Profile

① Higher brain dysfunction due to traffic accident (Right lower limb disorder: Walking with ankle foot orthosis and Lofstrand crutch)

② Impediment to the leg. Need support to prevent deterioration of memory and decreased motivation

③ Female, 20s

④ Disability acceptance (Inactive, less aware of need of using short leg brace)

(2) Point of support to physical disorders

Although the person in the Case 2 has problem with her leg, we adjusted the surrounding environment to use legs in weaving to help her improve walking ability and take balance of the body trunk.

As she could not accept the style and image of her walking and could not understand the need of short leg brace, she came to the training without wearing a short leg brace and wanted to wear fancy shoes like heels. We supported her to accept the short leg brace to walk safely.

(3) Support for higher brain dysfunction

① Disability condition

Have no confidence and can't be positive, can't have useful sense of self (Can't find value of self), serious and punctual. Low need for support in calculating/writing, but need support in retaining memories and in the establishment of work and procedure. She gets confused a little with the work that requires use of upper limb and lower limb alternately.

② Enhanced support that leads to self-confidence

- a. Make the procedure manual and the checking tools clear and eliminate the failure experience.
- b. Assign her to assist another user who needs more support than herself.
- c. Assign her to assist another user with visual disability to provide visual information to accumulate the experience of being required for visual confirmation, judgment, opinions, and comments
- d. Request senior users to cooperate as a peer counselor.
- e. Provide many chances for staffs and visitors to evaluate her works.
- f. Obtain family cooperation in training activities and evaluation of works

(4) Final evaluation

① Situation in the training room

She could not talk in a positive manner and could not make new friends, but she is trusted and appreciated by the user to whom she gives assistance. But people understood that her unconfident statements were caused by her disability and she made more friends. People around her began to change, praised her favorable characteristics being serious and punctual and became supportive to her.

She used to take time in unsteady walking, and took longer break time including meals before, but now she walks faster, and as a whole, moves more smoothly; therefore, we return her training schedule to the ordinary one. She looks brighter and we can see her smile.

She started handweaving from 2m but now she can challenge 6m cloth.

② Situation of families and communities at the end of the training

When she started training, she called her mother almost every day to complain. The frequency of phone calls gradually decreased and her statements changed to be more positive and she began to accept her own disability, and by the time she completed training, she rarely made phone calls.

Her mother knows this situation in the course of training. We had a feedback as information from the community that people who know her and her family well said that she became cheerful and her mother became even more cheerful because of her.

③ Status in the community after training

After the training, she has continued handweaving at home for more than 10 years. She takes orders at home and sells them through her friends and her mother's friends.

Currently, she expanded her range of activities after she got a driver's license, which she strongly desired for, with approval from her family on condition that she has fellow passengers when she drives a car.

3) Case 3: Visual disability/Higher brain dysfunction (Anxious tendency: To sound stimulation, especially ambulance siren)

(1) Profile

- ① Visual disability/Higher brain dysfunction due to traffic accident that caused memory loss, have no confidence, be inactive, and feel a deep sense of unease, need support for moving/working because of visual difficulty (Weak eyesight/Visual cognition)
- ② Because of memory disorder, the user loses his (her) destination in the middle of action. Sensitive to sound (Feel a deep sense of unease with the sound of siren) and hard to concentrate

(2) Support for visual disability

First, understand the factors that cause anxiety and confusion, and start to adjust the surrounding environment, such as to recruit the supporters in the community.

Normally, support is given in setting up things and sorting out colors, etc., and in explaining the details for the user to start working by following memories, but it is not possible for him (her) because of memory disorder.

- ① Prioritize the process that can be done, focusing on the weaving.
- ② Subdivide the process into smaller processes and proceed in small steps.
- ③ He (she) cannot check the work by himself (herself). Because of memory disorder, he (she) also feels anxious about whether or not he (she) has woven it by himself (herself). We measure the size of the finished work and work load and give our feedback at the end of the training. We keep the finished woven cloth where he (she) can touch at any time to check the quantity of work and as a reference for retention of memory.
- ④ We support him (her) to understand how the woven cloth looks and what impression it gives through the words of people around.

(3) Support for higher brain dysfunction

Because of memory disorder and being unable to use visual information, we subdivide the process into smaller processes, limit the amount of information and new words, and replace words and things to be used in the work with ones easy for the user to understand considering his (her) experience and environment. Then, gradually increase the process starting from what he (she) can do.

- ① Eliminate acoustic stimulation
- ② Separate by partitions and visually cut off so as not to get caught up in conversations around
- ③ Confirmation of memory: Record on a tape by carefully checking the contents of the training and his (her) impression at the end of the training.
- ④ Confirmation of memory: Before starting work, listen to what was recorded on the previous day and review it.
- ⑤ To explain about the work and tools, replace the words with ones that are familiar to him (her) from experience or ones that are easy to check by touch to help visualization. For example, when we want to communicate about the sense of achievement of work, we explain about the work by using mountain climbing as an example if the user has an experience in mountain climbing.

- ⑥ Adjust the surrounding environment to help him (her) visualize the process from the positions and marks without memorizing the names.

Example: Sleying process: By touching, feel the reed = deflection of reed = sleying = “Pass the thread through the comb”

(4) Confirmation of the woven cloth and support to memorize

- ① Confirm the woven cloth by the sense of touch
- ② Name the woven cloth
- ③ Confirm with the records of daily training and with the advices of the users around.
- ④ Pile up the woven cloth, and by guessing from the amount of work, confirm that he (she) is continuing work.

(5) Providing information, reporting the progress of training to the family, and future support

- ① Repeatedly send progress report, e.g., by lending out the recording tapes and woven cloth when the users return home, as they cannot explain the status to their families by themselves.
- ② Using the training scenes, explain the situation to the families and supporters, and provide them with an opportunity to experience the training from the technical aspect as well as the contents and ways of support.

(6) At the end of the training, visit the community, confirm and help adjusting the surrounding environment

- ① Confirm and request for the resources available in the community.
- ② Explain to the families about the challenges for the user and how to help him (her), and let the family experience assistance, and request their cooperation.
- ③ Create a resource/support system in the community. Cooperation from the SAORI devotees and interested persons can be a great vitality to the support activity.

(7) User's status in the community after training

We saw several cloths woven by the user at home with support from family. He (she) found a new task to work on other than to help his (her) family business, which gave something to live for both to the user and his (her) family. It gave him (her) hope for the future. He (she) wants to move forward step by step and sell and get income in the future.

Chapter 2.

Preparation for the Training

Evaluate the targeted users of vocational training service from the standpoint of conducting training (How much support is needed)

You need to grasp the challenges and advantages of the user to proceed with handweaving as well as the adjustment of the surrounding environment from the perspective of problems in proceeding tasks, points to consider, and the support to help independence. After clarifying the problem, prepare for the training giving consideration on how to solve the problem, how to address the problem, and how to substitute the problem.

1. Evaluation of the Targeted Users

1) Points to be checked for evaluation

- (1) Status of needs for the targeted person in handweaving (Interest, image of handweaving, needs of training)
- (2) Future visions and social participation plans after completion of the training.
- (3) Health management: Medical information, drug administration, consideration for primary disease, status of disability, etc.
- (4) Social background: Early developmental history, family status, financial condition, community condition, etc.
- (5) Work-related information: Preparation for work, work experience, qualification, etc.

2) Method/Purpose of evaluation

- (1) Confirm the movement of body site required for handweaving and observe the behavior while the user is experiencing the real working process.

Make a plan and consider the method and approaches on the basis of comprehensive conditions including health management other than physical disabilities, management of everyday life, interpersonal skill, sociality, preparation for occupation, etc.

(2) Evaluation items

① Health management

- Understanding of diseases and disorders
- Medication management (Hospital visit)
- Dietary/nutritional management
- Management of physical condition

② Management of daily living

- The basic rhythm of life
- Mobility capability (Driving, Use of public transportation)
- Basic skill of learning (Ability to understand, numerical processing, ability to communicate, etc.)
- Self-awareness (Personality, characteristics of disability, dexterity of the fingers)
- Management of money

③ Interpersonal skills

- Emotional control
- Apologizing when warned
- Greetings/understanding to the people he/she does not like

④ Basic work habits

- Greetings, response, communication, reporting, consultation
- Grooming and appearance
- Ability to continue work by keeping the same quality, strength, fatigue
- Motivation, willingness to work
- Interest in handweaving

⑤ Negative behaviors and remarks toward independence

- Taboo words and points of support

⑥ Willingness to participate in society

⑦ Family situation and living area

⑧ Others

When conducting evaluation, we confirm all the information obtained through prior information, materials, and interviews. We especially emphasize the willingness of the person. It is because the motivation of the person will often serve as the driving force for his/her family and the people around to support and cooperate. It can also be said that it is a challenge for the supporters whether or not they can motivate the person and support him/her in a positive manner.

3) Items to be studied (Consider the immediate action to take for the problem, substitution measures, and adjustment of the surrounding environment on the basis of the result of evaluation)

(1) Adjust the surrounding environment on the basis of the result of evaluation

- ① Consider whether group training is available from the beginning, or need to consider the creation of a personal environment.

② Use of looms and tools

Select the looms and tools on the basis of items to be considered including dominant hand, affected region, grip strength, enduring strength, etc.

(2) Intellectual issues, memory/communication issues, etc.

Prepare the contents of explanation and procedure manual according to the level of support, and organize the recording method and calculation items.

(3) When there is a problem in physical condition and physical strength

Conduct short time training and find the most appropriate time for training, means of movement, etc. through the training.

(4) Characteristics of hypersensitive reaction, interpersonal response, etc. at the time of evaluation

Observe through the training conditions such as “doesn’t meet eyes with other person,” tense feeling, perseveration, or become sensitive about words (taboo words), and consider how to respond to them. If no adaptability and stability is seen in the course of training, request a professional approach.

(5) Examine the cause of negative behaviors and remarks toward independence

Find out whether it is a problem that is resolved with time or is a problem that needs support. Examine the time to start training, training period, how to support in training as well as support by the team of rehabilitation staff, and support them in a consultative and collaborative situation.

(6) Current status of self-perception

Understand if there is a large gap between the user's hope for social participation in the future and the present situation, and explore ways to support for the future.

(7) Understand the readiness to be cooperative in support and examine the situation

Perceive the present situation, e.g., the living area of the user, relationship with the family and the people around, with the after-the-training support in mind. Systematically carry it out by providing information to the family in accordance with the training for them to have a concrete awareness of support and to build a collaborative situation.

4) How to proceed with the training

(1) Understand the targeted person's disability, problems, and challenges in behavior, etc. in carrying out handweaving training, narrow down the point of support, and set priorities.

(2) Adjust the surrounding environment to provide a safe and stable place, e.g., community support, build a trusting relationship by listening carefully to the user's will, and determine the time to start support for the problems mentioned in (1).

(3) While starting the support for (1), find out whether there are other priority issues.

(4) When the priority issues are achieved, move to support for the next priority issues.

(5) Repeat monitoring during the training (interim evaluation) and continue support for the challenges that hinders independence.

(6) Anticipating completion of the training, provide support under the environment to continue practical training of handweaving (e.g. at home) with the cooperation of supporters. With regard to problems found during practical training, conduct feedback training at NRCD until the completion of the training, while organizing the contents of support, and provide explanation/information and real experience of support to the direct supporter.

(7) Support will continue for a while after the completion of the training, in order to provide information and to grasp the situation.

2. Improvement/Consideration for Handweaving Work Depending on the Variety of Disabilities

NRCD gives consideration to respond to various physical conditions, as it mainly targets people with physical disabilities. In adjusting the surrounding environment, it requires information collection and observation to find whether a consideration to one person is causing inconvenience to another person with other type of disability. The point is to listen carefully to the users' opinions and intentions, the users' understanding about the adjustment of surrounding environment, and participate in it. We adjust the surrounding environment so that the users can see each other's status. For the details of loom structure mentioned below, please see Chapter 3, Section 3, Names of loom and tools.

1) Consideration for the loom (Setting and consideration according to the disability condition)

(1) Utilization of shuttle shelf (for users in following conditions)

- ① Difficult to move with a shuttle in hand
- ② Difficult to coordinate using both hands
- ③ Can work with only one hand
- ④ Tremulous, trembles from the strain
- ⑤ Problem with attention
- ⑥ If drops the shuttle, can't pick it up

(2) Mounting of manual shedding device (for users in following conditions)

- ① Can't use lower limb for work
- ② Need to keep feet on the floor because of poor trunk balance
- ③ Get confused in working by using hands and feet alternatively
- ④ Can't put muscle into the legs
- ⑤ Need to work only by upper limb because of low back pain

(3) Display the process of weaving work

- ① For a person with memory disorder, display the process of the operation of the loom until memory is established.
- ② For a person who gets confused when he/she works using upper limb and lower limb alternatively, display in language, and for a person with aphasia or having a limited vocabulary, display picture cards and illustrations.
- ③ For a person who cannot prepare for various processes or cannot make a calculation, prepare a quick reference card, or use arrows, pictures, and illustrations to indicate the work procedure. At the same time, explain the meaning of the words such as "each," "alternately," and "back and forth," and prepare a learning-through-doing task to understand the work.

2) Consideration for the warping frame (See Figure 17 and 18 for warping and warping frame)

(1) Height adjustment of warping frame

According to the position of warping work such as body height, upright position, seated position, etc., adjust the height of the warping frame and set it to another frame for warping frame.

(2) Cut the two projections at the center of the lower frame.

Cut off the two projections at the center of the lower frame to secure the safety of a person in wheelchair and a person with attention problem, who can't pay attention to the feet or lower limb when absorbed in work, or for a person with visual difficulty (with the warping length of 1m).

(3) Display the length on the warping frame

Display the length on the warping frame, considering persons who can't start work without any clue, who needs help in memory, or who feel anxiety and confused if the specified position is not displayed. This will help them make a calculation and understand the concept of odd/even numbers.

(4) Display the process of warping by arrows

For a person with topographical disorientation, spatial cognitive dysfunction, memory disorder or who gets confused in procedures, display with arrows the direction of *aya* (cross), starting point, and

the position to turn.

(5) Use of the notes and support (for calculating and checking the number of warps, etc.)

Prepare a note pad on the warping frame and indicate the notes, calculation, and schedule for a person who needs to take notes to memorize. It helps the user to understand that it prevents mistakes in work and confusion in numbers and work procedures, and to become aware of the needs of taking notes and recording, which will become a habit.

(6) Calculation of the length and numbers of warp threads (Calculation by reference to the procedure manual and work files)

① Make the calculation formula by following the procedure manual and calculate.

② When the task of calculation is not set or cannot be set, decide dimensions and number of threads by using work specifications.

(7) Make a card that indicates how to take warp threads out of the warping frame and the position to tie.

After finishing warping, remove the thread from the warping frame in the process of preparation for the slewing the reed. Tie the threads at designated positions so that the warp threads won't tangle; the user can move to the next process and set them on the loom. We make a card that indicates the position to tie for users who don't understand or can't memorize explanations in words.

3) Consideration for slewing

(1) Use of the reed board

We use reed board (original) for safe and stable work. Users can work at their own pace as they need less attention and easily stop working.

(2) Use of the card to indicate the position of threading the reed and for threading evenly.

① When the user understands the calculation formula and can calculate

Follow the procedure manual on how to make a calculation formula and how to calculate according to the dimension/specification of the reed. If available, use the measures, etc.

② When the calculation is not included in the task

When it is difficult to handle numbers in calculation because of memory disorder, or for a user who is bad with figures, skip calculation process and use the quick reference card to handle numbers and work along with the procedure card.

③ When it is difficult to record the display on the card, or to check the work, or might cause confusion

a. Avoid overlap of thinking and working at the same time.

b. Put the procedure card on the reed and pass the thread through the reed one by one, by aligning to the width of the card. Put extra yarns on them one after the other at even intervals.

4) Consideration for threading the heddle

(1) There are 200 heddles each at the front and back. Mark every 50 threads to pass the thread evenly. That makes it easy to take balance of the heddle and to set a goal of work.

(2) Accuracy of work

Work by accurately grasping the condition of front and back heddle, the progress of work, and threading. To find and correct errors, separate the work at the position of thread.

(3) Work as a collaborative activity

When a person cannot pass through the heddle alone, share the work in a pair. Gradually increase work what they can do after they take turns to share the work so that they can work alone in the course of time.

3. Utilization of Procedure Manual

1) Need of procedure manual

In SAORI weaving, it is important to proceed with work freely and in a person's own way, bring out the latent ability, and enjoy self-expression itself. As the self-expression is predicated on self-choice and self-determination, it is said that teaching and guiding can ruin a personality and the person's potential.

However, in actual training for persons with disabilities, there are stages for them to receive guidance and to imitate. After going through those stages, they will be able to decide by themselves and move on to the stage of self-expression. From the stage of imitation to the stage of self-expression, they may need support depending on the disability condition.

We prepare procedure manual as one of the means to support this situation.

2) Types of procedure manual (We prepare roughly 4 types)

- ① One for making a calculation formula. Calculations will be made by using a calculator that facilitates work.
- ② A card that helps users, who are bad with figures and calculations, get the results of calculation by figuring out the length and numbers from the quick reference card or from the specifications and facilitate their works.
- ③ One that indicates the direction of work by using illustrations, graphic explanations, arrows, etc., to help users who are bad at character handling.
- ④ Work files useful to record or retain memories and as a checking material during work. When the fabric is completed, it will become a work collection.
- ⑤ Others (Procedure manual made considering the condition of disability in addition to the above ①-④)

3) Free-thinking and work files

Enlightened by the free-thinking of SAORI, many people with disabilities are enjoying handweaving, pursuing its unique world. We use work files for people who can adopt the idea and take advantage of it after explaining its basic procedure. Accumulation of handweaving experience and the opportunities to appreciate and see the works will lead to an enriched self-expression.

4) Example of procedure manual

(1) Example: Procedure manual for designing muffler

- ① Measure the size of muffler you like (by using reference dimensions) and decide the width, length, etc.
- ② Select the yarn: Select the yarn considering priorities of the muffler condition such as texture, dress to fit it, thickness, colors, size, ease of care (See the reference material).
- ③ Decide the weaving density: Number of reed eyes (Decide the reed by comparing with the image of finished work by using the checklist of reed and yarn, etc.).
- ④ Calculate the number of warp yarn, or find them in the quick reference card.
- ⑤ Decide the lengths of warp yarn and warping. Example: 5m (for 2 mufflers).
 - a. Warp yarn for 2 mufflers: $(2 \times \text{length of 1 muffler: } 1.8\text{m}) + 1\text{m} = 4.6\text{m}$
 - b. Reason for adding 1m (for loss). Because of the machine (loom) structure, there is unwoven part (warp). Considering the disabilities, set the loss part 1m longer than ordinary.
- ⑥ Supplemental remarks
 - a. $3.6\text{m for 2 mufflers} + 1\text{m loss in warping} = 4.6\text{m}$.
Considering disability, we count by 1m. The nearest integer number to $4.6\text{m} = 5\text{m}$.
 - b. Reason for 1m loss: Consideration for disability; pull the yarn too strongly from the strain, need longer yarn to tie yarns, etc.
- ⑦ Write down the above ①-⑤ information in the work file (record sheet) and attach the yarn actually used to it. It will help them know how they decided what, and give them a sense of safety. Also, it can be a clue to start working when they receive a request for similar works.

Work File

No

Month/Date/Year

Name of work	Carpet Muffler Vest Sweater Jacket One-piece suit Small article Tapestry <u>Dress material</u> Others ()				
Season	Spring, Summer, <u>Autumn</u> , Winter	Reed	3-dents, <u>4-dents</u> 5-dents	25 cm 120 yarns 6 m	
Warp yarn	Cotton, <u>Chemical fiber</u> , Wool, Blended yarns, Silk				
					
Weft yarn	Cotton, <u>Chemical fiber</u> , Wool, Blended yarns, <u>Silk</u>				
1 yarn 2 yarns 3 yarns 4 yarns 5 yarns 					

Figure 1. Work file

Chapter 3.

Actual of SAORI

1. Textile Structure of SAORI

1) Textile Structure of SAORI (mainly plain weaving)

Plain weaving is basic weaving that uses a 2-heddle loom that is essential for introducing handweaving. Furthermore, it is said that a person who enjoy various types of handweaving will wind up in this plain weaving as it is a basic weaving that enables you to lead to a profound self-expression and you can work on it by adding interesting effects and ideas that makes your ideas richer. The looms and accessories have been remodeled and improved. Please see SAORI home page for more details and updated information.

SAORI URL:<http://www.saori.co.jp/>

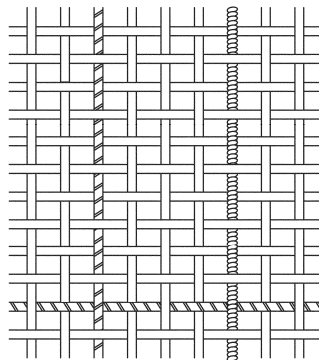


Figure 2. Texture of plain weaving

2. Operation of the Loom

1) Operation of the loom (Operation by using various body parts)

(1) Operation of the loom (Use hands and legs alternately)

- ① When you step on either the right or left treadle (pedal), the heddle will be lowered that separates the warp threads to create a space between upper and lower warp yarns. Pass the shuttle with weft yarns through the space. Step on another treadle (pedal) to lower another heddle and beat the reed.
- ② While keeping the treadle (pedal) as ①, pass the shuttle with weft threads between the upper and lower warp yarns in the opposite direction to ①. When you step on another treadle (pedal), the first heddle is lowered again. Beat the reed.
- ③ In the same manner as ① and ②, step on the treadles (pedal) alternately to let the two heddles move up and down, and pass the shuttle with weft yarns though the warp yarns alternately from the right or left ends, step on another treadle (pedal), and beat the reed.

(2) Operation of the loom by only upper limb

- ① Instead of stepping on the treadle (pedal) to move heddles up and down to separate the yarns, attach a manual shedding device. Attach a weight in the center of the lower back heddle frame (shaft) behind the loom to keep the heddle down.

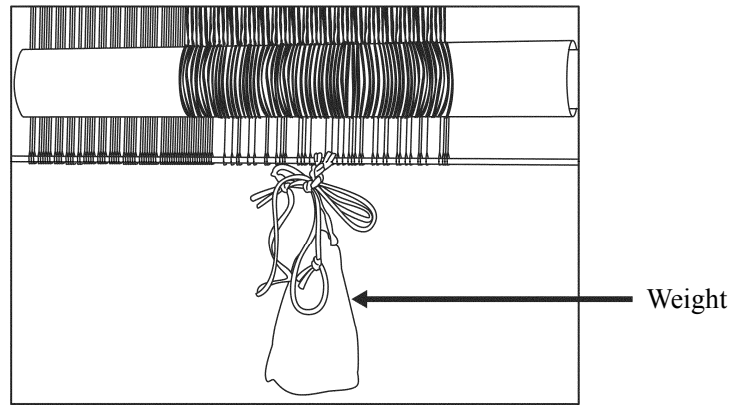


Figure 3. Hanging weight from the heddle frame

- ② When you lower the front heddle, attach the manual shedding device to the heddle frame to keep the heddle down. The warp yarns different from ① will go up and the heddle at the back will go up with the weight.

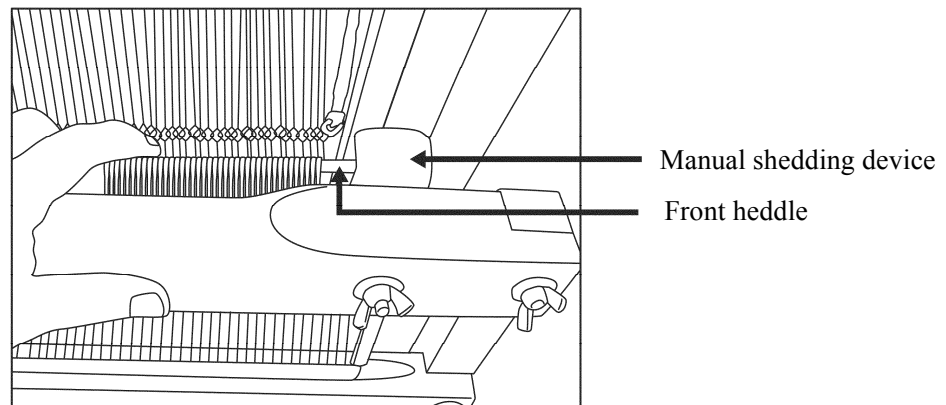


Figure 4. Attach a manual shedding device to the front heddle (Heddle with weight will go up)

- ③ Pass the shuttle with weft yarns through the warp yarns in the opposite direction to ①. When you beat the reed, the manual shedding device will come off from the shaft and the heddle in the back will come down because of the weight.
- ④ By using the weight and manual shedding device, you can lower the heddles alternately to separate warp yarns to pass the weft yarn through the warp yarns.
- (3) Passing of the shuttle

Even a person who can't hold the shuttle to pass the weft yarn because of the limited range of motion, weak-handed, difficulty in the motion of holding things itself, or tremulousness, can weave without holding a shuttle by attaching a shuttle shelf, and by pushing or pulling it.

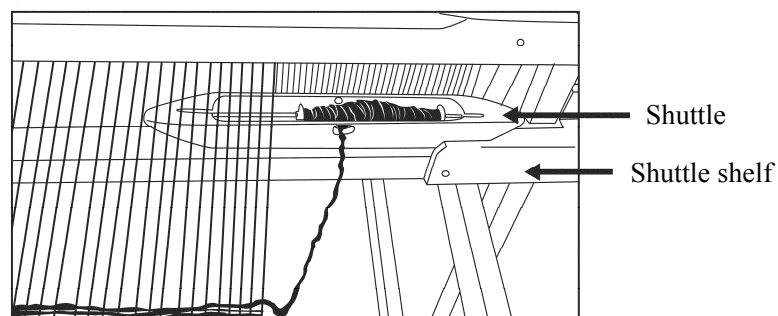
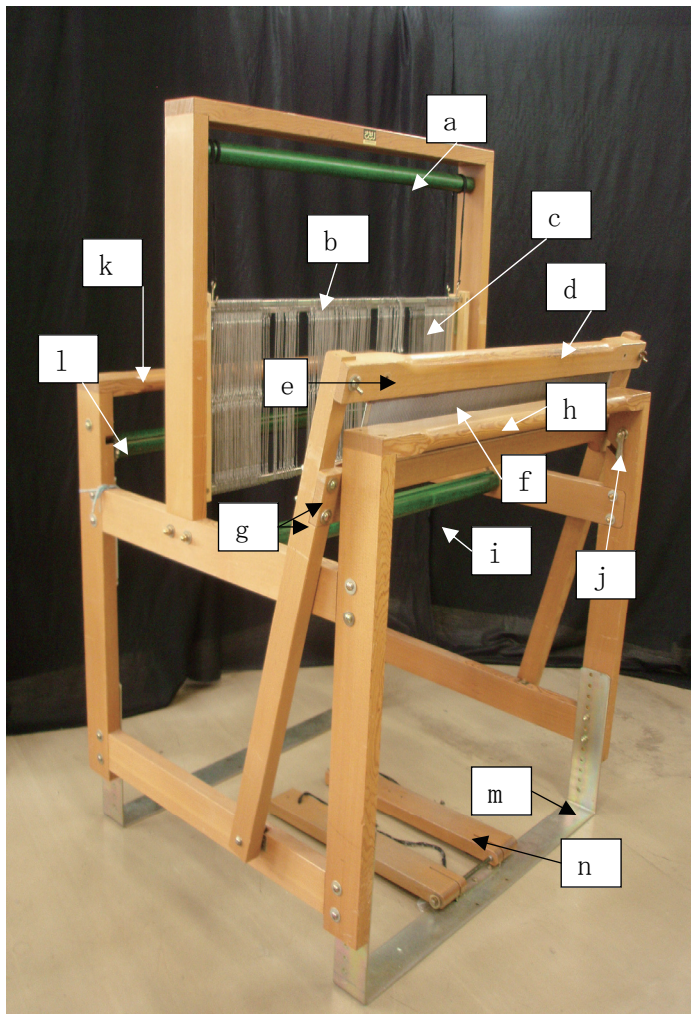


Figure 5. Moving the shuttle with the shuttle shelf

3. Names of Loom and Tools (SAORI 65A. Explanation is for a cloth with max. width 65cm)

1) Names of loom parts



Names of loom parts

- a: Head roller
- b: Heddle frame (Heald frame)
- c: Heddle (Wire heald)
- d: Reed cap
- e: Position to attach manual shedding device
- f: Reed
- g: Position to attach shuttle shelf
- h: Breast beam
- i: Cloth roller (Cloth beam)
- j: Position to attach cloth roller
- k: Back beam
- l: Warp roller
- m: Height adjusting anvil
- n: Treadle (Pedal)

Figure 6. SAORI 65A (For a person in a wheel chair: Can adjust the height of the breast beam from the floor)

*The cloth roller will be set at “i” instead of “j” that is the normal setting position as seen in the following figure.

2) Tools used in handweaving (including the loom accessories)

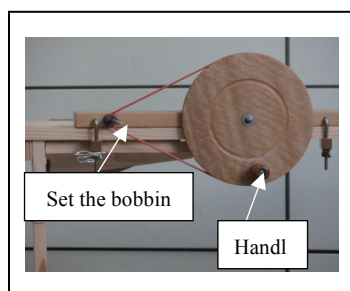


Figure 7. Winder

Winder

Tool to wind up the weft yarn to bobbin

- The picture is for right-handed persons
- Swivel 180 degrees around for left-handed persons

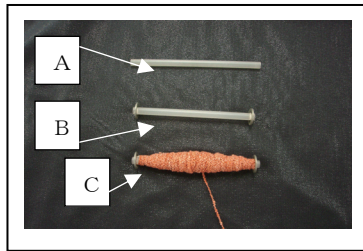


Figure 8. Bobbin

Bobbin: Tool to wind the weft yarn around

A: Bobbin

B: Bobbin with rims (Easy to handle as the edge of yarn won't come off easily)

C: Weft yarn wound around the bobbin (B above)

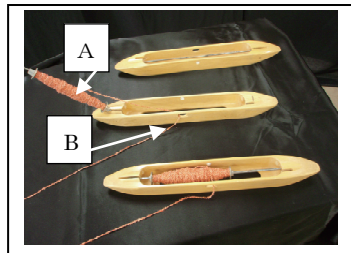


Figure 9. Shuttle

Shuttle

Tool to pass the weft yarn wound around the bobbin through the warp yarns

A: Attach the bobbin to the bar in the shuttle

B: Pull out the yarn through the big hole in the shuttle

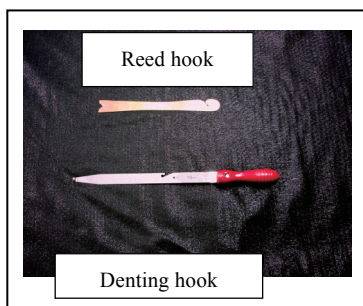


Figure 10. Reed hook

Reed hook

Tool to pass warp yarns through the reed

Denting hook

Tool to pass warp yarns through the reed without relying on the visual information

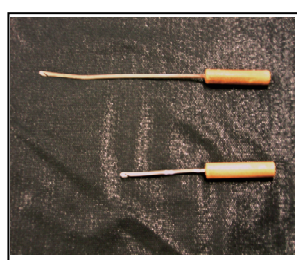


Figure 11. Wire threading hook

Wire threading hook (Heddle hook)

There are 200 wires on the heddle frame. The center of the wire is loop-shaped (ring-shaped).

Pass warp yarns through these holes.

Seen at the bottom in the picture is improved short reed hook.

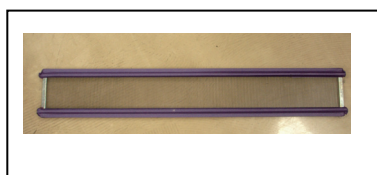
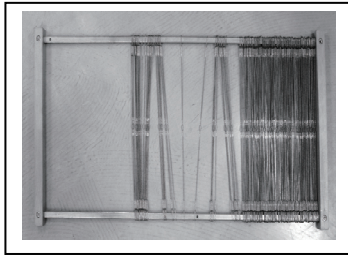


Figure 12. Reed

Reed: Tool to evenly space the warp threads and pack in the weft threads (Select reed depending on the width of the thread)



Heddle frame

There are 200 wires on the heddle frame, the center of which is loop-shaped (ring-shaped). Attach it to the loom and pass the warp threads through these holes.

Figure 13. Heddle frame

4. Yarns Used in Handweaving

1) Types of yarns

Select the yarn depending on the use and expression. It is important to select yarns with which you can minimize the trouble of concentrating on handweaving by taking advantage of the yarn.

- (1) Material: Wool, silk, cotton, hemp, recycled fiber, synthetic fiber, etc.
- (2) Shape: Single yarn, two-ply yarn, multiple wound yarn, fancy yarns, etc.
- (3) Standards of interlacing, material, thickness, and the type of dyestuff and dyeing methods.

2) Warp yarns

Keep the warp threads tight by tying both ends to the loom throughout the weaving. Therefore, it is important to select yarns with strong tensile and ones that do not easily break. Once you get used to it, challenge the thin yarns and fancy yarns. Suitable warp yarn is one with the thickness that does not hook into the reed and heald and is lint-free. Black and dark colors will bring out the color of the weft yarn.

< Yarns suitable for warp yarn >



- Yarn with strong tensile strength
- Lint-free yarns
- Blended yarn, chemical fiber, wool, silk, cotton
- Yarns of uniform thickness are suitable for warp yarns.

Figure 14. Yarns suitable for warp yarns

< Fancy yarns >



Figure 15. Fancy yarns

Photo on the left: Explained from the left

- Yarn with nonwoven fabric ribbons
- Nepp yarn
- Loop yarn
- Winged yarn
- Beads yarn

3) Weft yarns

You can freely choose yarns, and if it is thin, use it by winding several yarns together around the bobbin. You can also enjoy in creative ways, e.g., splitting a cloth into string-like yarn.

The balance of warp and weft yarns will result in the difference in texture when finished, and thick weft yarn is suitable for beginners as it makes the fabric more stable and easy to weave. Yarns with same color density will make a cloth innocuous. You should start with a color you like, then challenge by listening to the opinions of the people around you and enjoy the surprising result of the finished cloth.

4) Selection of yarn

When you select yarns, take advantage of your knowledge about the yarn on the basis of multiple criteria according to the use and season, for example, yarns with soft and warm feeling for mufflers. For example, even if the color is nice, people will avoid it if it is heavy for a dress, or a material that is not comfortable to the skin. During winters, people want materials that retain heat, and in summer, they want those that have air permeability and moisture absorbency. You need to consider the washing and durability also. Appropriate color for the skin and personal taste are also important factors in selecting yarns.

5) Finished woven cloth determines the design

Sometimes, the flavor of finished woven cloth is different from the image you had when you selected yarns and started weaving. Don't give priorities to the plans and feelings but face the fabric focusing on maximizing the effect of the fabric and emphasizing the self-expression. Determine how to finish up, how to decorate, and how to present the cloth from the perspective of self-expression. Consider how you can maximize the effect of the cloth, e.g., muffler as originally planned, or what else would fit with such feeling, texture, and color on the whole.

5. Main Processes of Handweaving

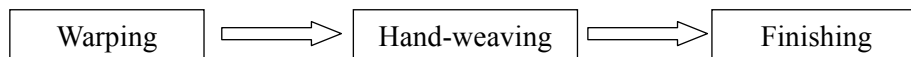
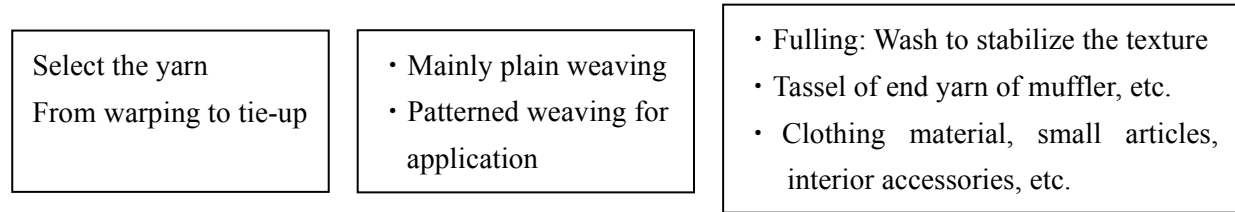


Figure 16. Main processes of handweaving



1) How to proceed with the process

SAORI handweaving starts from the warping process. However, as you proceed, you will find that there are so many tasks such as things to remember, unfamiliar names, and so forth. Therefore, for the beginners, we start with the weaving process so that a person can easily start and feel that they did it by themselves. After getting hold of an image of handweaving, they will move to the next process: preparation for weaving, understanding of the structure of loom, and so on.

2) Design of weaving

(1) Design of weaving (See the procedure manual for details)

- ① Select the warp yarn: Consider the use, what you want to make, and conditions by reference to your knowledge of yarns.
- ② Figure out the length of warp yarn: Size of the cloth + loss in making cloth + 1m loss in warping
- ③ Decide the weaving width: Width of the target item + loss in shrinkage
- ④ Select the reed: Consider the thickness of the warp yarn, use, and weaving density.
- ⑤ Decide the number of warp yarns: $(\text{Width} + \text{shrinkage}) \times \text{number of dents} + \text{extra for special arrangement (e.g., 20 yarns more and pass several threads in one dent, if you like)}$

3) Preparation of warp yarn: Warping

Warping is a process to set the required number of threads at uniform length on a peg and make a loop of long threads. Cut 2 points of the loop to make the required number of warps of the same length.

① Process of warping

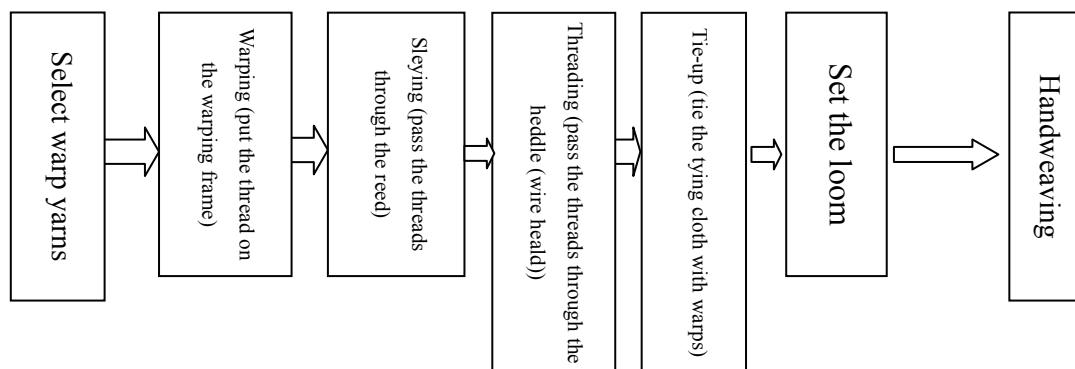


Figure 17. Process of winding warps

4) Adjustment of warping frame environment (Adjust the work environment before starting warping)

Adjust the height of warping frame according to the user's body type and work position including standing position, seated position, as well as the range of arm's reach and the disability condition. More specifically, prepare a frame to which the warping frame is attached according to the height and working posture. Depending on the condition of disability, often a person habitually holds something or leans when standing up from the sitting position or when moving; therefore, the warping frame must be solidly made.

Environment of warping frame: Explanation for the warping of 3m.



Figure 18. Warping frame and its frame (made by National Rehabilitation Center for Persons with Disabilities)

Explanation of Figure 18 (Consideration for people with various disabilities)

- (1) Fix the warping frame to the frame and adjust the height suitable for the user.
- (2) Cut off the two bars at the center of the lower crossbar (for the safety of a person with disability and to make it easier to perform warping for a person in wheelchair)
- (3) Indicate the starting point of the warp thread (ex. 3m) on the warping frame.
- (4) Indicate the turning point as zero.
- (5) Indicate the direction of the thread with arrows on the peg to cross.
- (6) Set a position to put scissors as a fixed position (Considering the people with visual disabilities)
- (7) Set a position to place notes and strings to tie, use them for calculations and to help with memories.
Set the tying position after warping and prepare procedure card.
- (8) Put a plate behind the lower part of the warping frame to handle threads without bending over.
- (9) Board to put cone stand

6. Warping

1) Warping

- (1) Hold the edge of a thread from the cone, bring it up behind the warping frame, and run it through the hook toward you, and wrap it around the hook from under the hook.
- (2) Make a loop with the end of the thread and put it on the peg at the starting point of warping for 3m as described in the instruction card.
- (3) Wrap the thread around the pegs by crossing the thread along with small numbers to “0” point, and return to the starting point of 3m. This completes one round of warping and you have made 2 warps. Repeat the step 3-0-3 by changing the thread until you have the required number of threads.

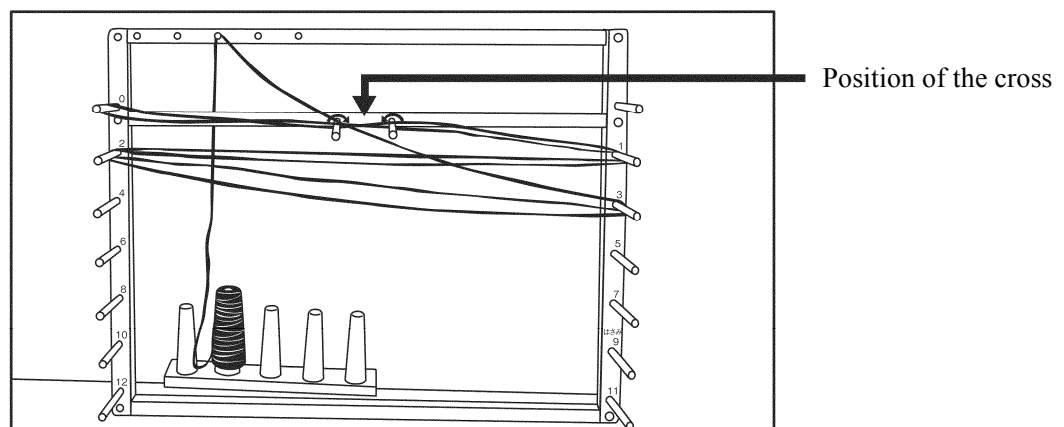


Figure 19. Warping

- (4) Confirm the number of thread at the starting point shown in Figure 19: 3 (that indicates the starting point of warping for 3m thread). When you return to the point 3, stop warping and wrap the thread around the peg a few times, count the number of thread you have warped, and continue until you reach the required number of thread.
- (5) For a user who is bad at figures, help in checking numbers and take notes of the numbers. Count and add the numbers completed. Use the memo pad for memorizing or calculation. Even when you have too many warps, leave them as much as possible as it will increase the thickness of the cloth.

- (6) Once you have reached the required number of threads, tie the thread at the specified point so that it is not lengthened or twisted.

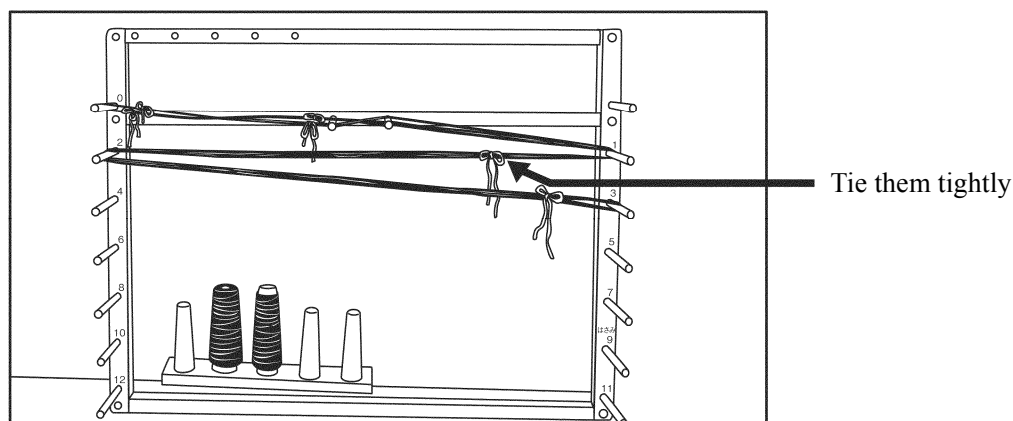


Figure 20. Tie the threads after warping

2) Supplemental remarks to warping

- (1) Various types of warping frames are available in the market.

- ① Without sticking to one meter intervals, you should bring ideas into view, such as devising and modifying the size easy to use, make warping in loops or 50cm intervals for small table looms, to make the work easier according to the disability.
- ② First priority is to be able to do the warping. Select the ways according to the user's situation.

7. Sleying

Pass the required number of warped threads through the reed.

1) Roles and standards of reed

The role of reed is to determine the weaving density by beating the weft threads while keeping the width of warp threads.

Standard number of the reed is engraved on the edge of the reed. This number shows the number of dents per 1cm. Example: 3 dents = 1cm split into thirds (3 sections) or you can insert 3 threads in 1cm. 4 dents = 1cm split into quarters. The number shows the number evenly split 1cm. (Figure 12)

2) Status of using reed

At the beginning of the training, we mainly use reed with three dents, as it is most suitable for thick and easy-to-handle threads. In the training, we mainly use reeds with three dents, four dents, and five dents. For delicate yarns, there is a reed with ten dents, but we select reeds depending on the condition of disability and thickness and material of yarns.

3) Preparation of sleying

We explain by using the 65cm width reed that is for the standard loom.

Usually, reed threading is made on the loom, but in order to ease tension and to create an easy-to-work environment, we take the reed off the loom and put on a rigid board (Reed board: original) for threading the reed.

(1) Take the reed off the loom and put it on the reed board.

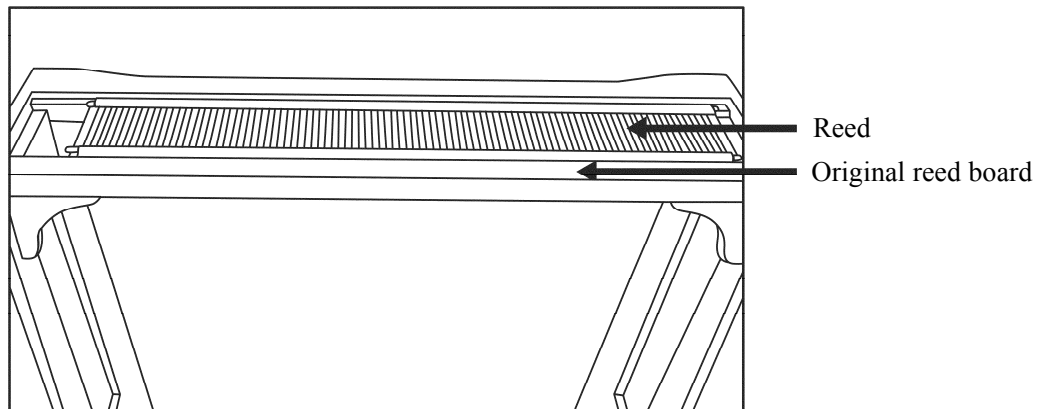


Figure 21. Preparation of slewing on the original reed board

(2) Attach the cross holder to the reed board and write down the position to cross and how to wrap the threads.

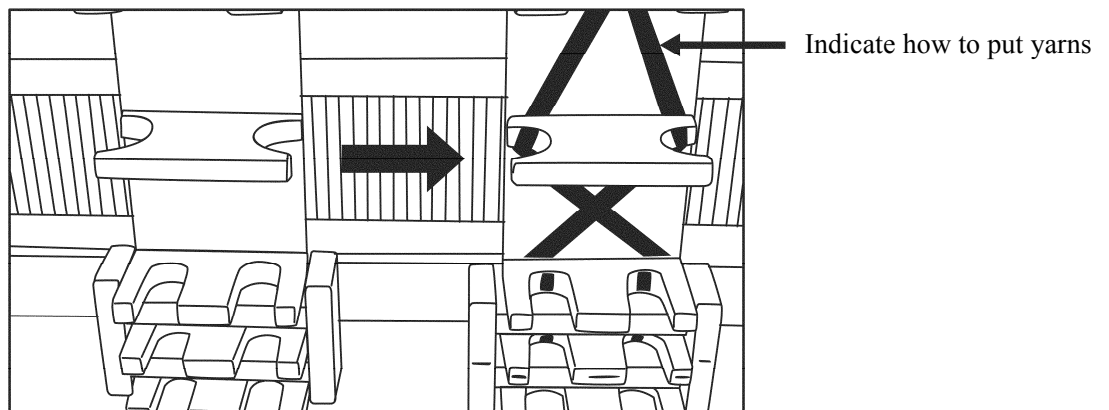


Figure 22. Write down how to wrap the threads on the cross holder

(3) Put the warp threads along the cross holder.

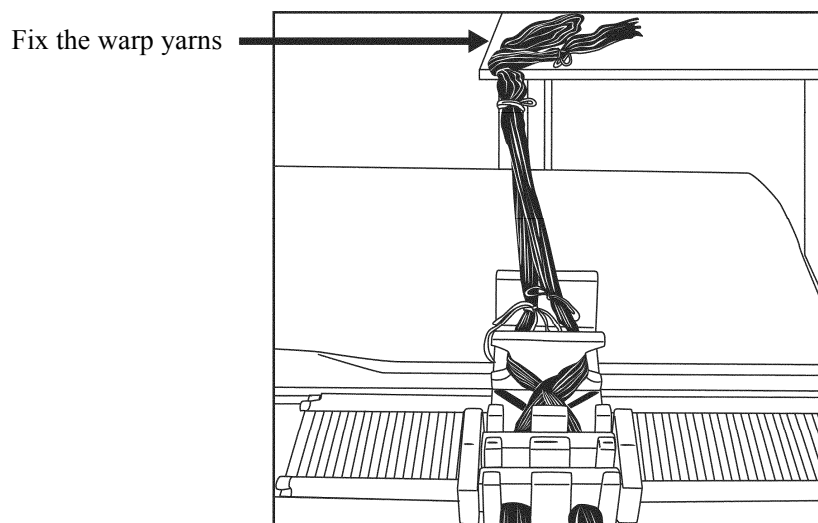


Figure 23. Completion of preparation for slewing

(4) Calculate the distance from the edge to the starting point of threading the reed.

$(\text{Reed width } 65\text{cm} - \text{sleying width}) \div 2$

Provide the user with procedure manual and quick reference card.

(5) Mark the starting point for sleying the reed.

4) Sleying the reed

(1) Pass the warp threads through the reed in the order of cross holder by pulling up the warp thread away from you. If you don't follow the order of crossing, it may become difficult to work.

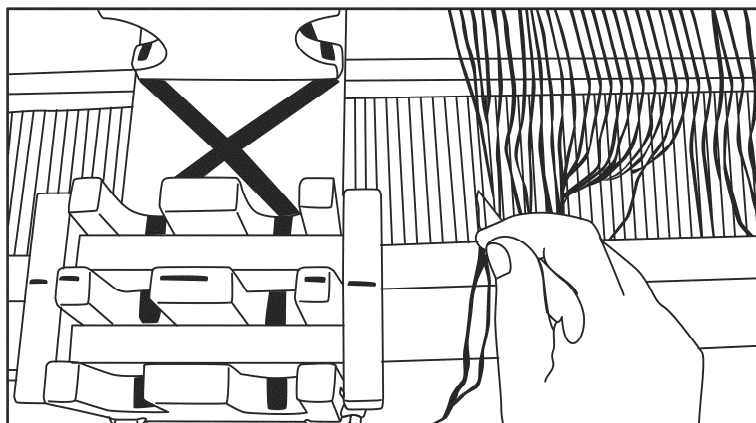


Figure 24. Completion of sleying the reed

(2) Supplemental remarks

① Direction to pull the warp threads

If you pull the thread toward you out of the cross to pass through the reed, it becomes difficult to work as the threads will tangle. Make sure to draw the threads away from you.

② Change in the thickness

If you occasionally mix some extra warp yarns, it will produce an interesting effect of handweaving.

③ Usage note for the reed hook

If you drop the reed hook on the floor, it is difficult to pick up; therefore, it is convenient to dangle it from the neck with a string.

④ How to use the denting hook

When you nip the wire of reed with a denting hook, put the thread and push it down, it automatically slides to the next dent and then pass the thread through the reed.

(Threading the reed without relying on the visual information: For use by a person with total blindness, weak eyesight, eye vibration, and cross-eye)

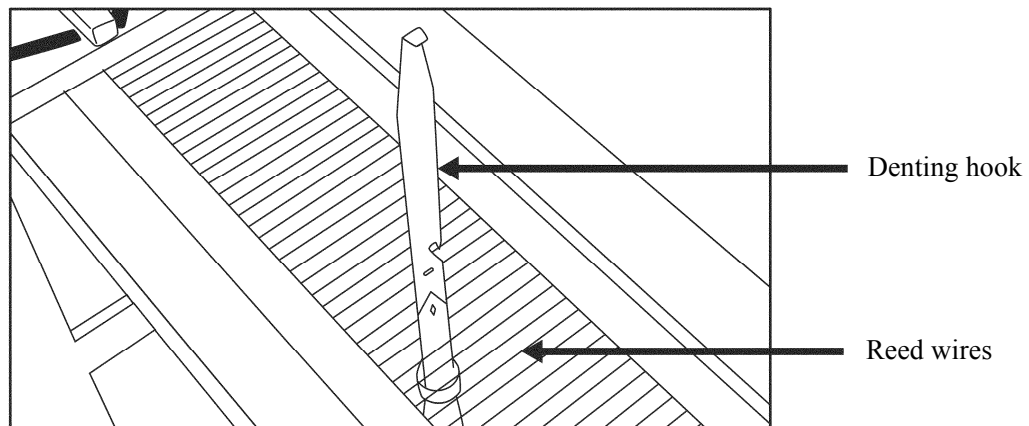


Figure 25. Denting hook slides to the next dent by nipping and moving the wires up and down.

* Instruction card and support of calculation formula: In order to pass the warp yarns through the center of the reed, we use the instruction cards and calculation cards for the calculation of sleying.

8. Threading (Passing the thread through the heddles (wire healds))

There are 200 heddles (wire healds) respectively at the front and back of the heddle frame.

Tools used for handweaving (See Chapter 3, Section 3-2)

1) Preparation for threading

- (1) Pass the warp threads through the reed, tie them so that they won't come off from the reed, and attach the reed to the loom.
- (2) Fix the warp threads tightly tied in the warping process, keep the length of warp threads even, and adjust the tension of the warp threads for the process of passing through the heddle.
- (3) Place the heddle hook at the center of the heddle frame. When you use 200 heddles (wire healds), mark every 50 wires in order to make it easy to know the number of threads.
- (4) For a person who feels comfortable to work with fixed numbers, or for a person who can work more steadily with patterned work, help them with procedures and calculations by using repetitive work of numbers, e.g., every other number.

2) Threading

Pass the warp threads through the heddles by keeping the order of threads in the reed. Pass them through the center in a balanced way in order to make it easy to correct any errors, and pass the threads through the front and back heddles, skipping the empty heddles (wire healds).

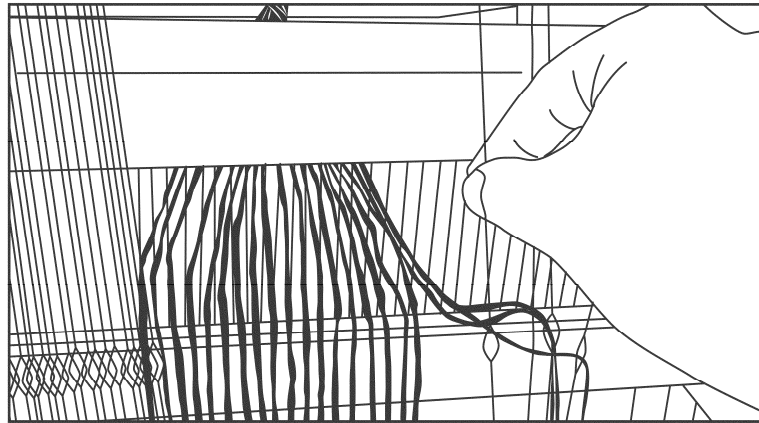


Figure 26. Threading

3) Confirmation and correction of errors in threading

Before tie-up, confirm if the threads are passed through the heddles in order, by holding the edge of the thread, stretching the thread, and moving the frame up and down. If the order is wrong, draw out the minimal number of threads and pass them again.

4) Common mistakes in threading

- (1) Warp threads are not passed through the heddles correctly in the order of reed.
- (2) Skip warp threads and pass the threads through the next heddles in wrong order.
- (3) The threads are passed correctly from the reed through heddles, but in the wrong order when pulling the threads from the heddles.

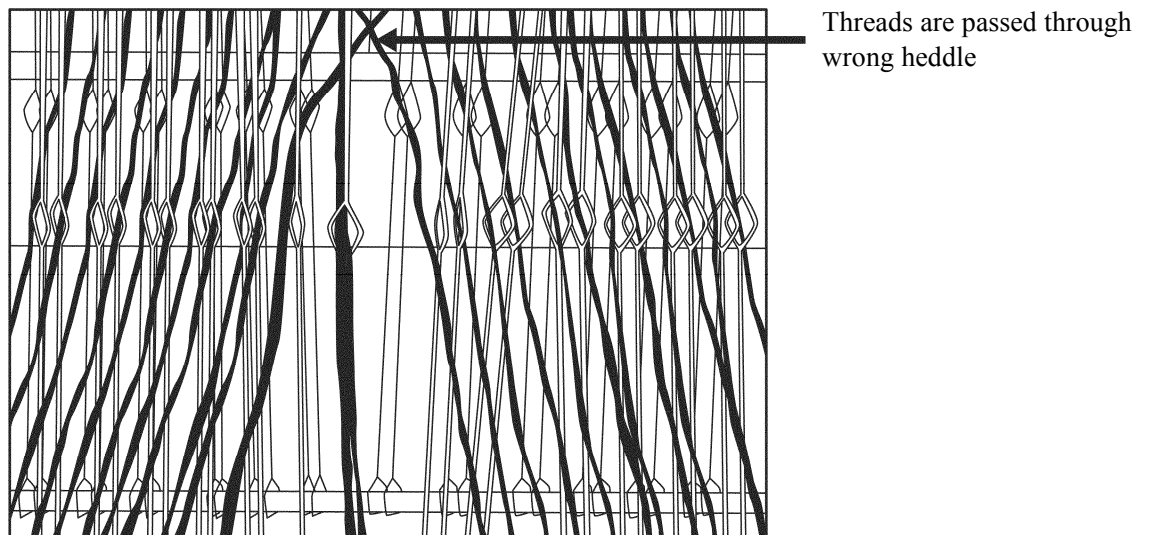


Figure 27. Common mistakes in threading

Example of 4)-(1) above.

9. Tie-up

1) Preparation of tying cloth

(1) Prepare two pieces of tying cloth

① Size of tying cloth

It differs depending on the width of the loom or fabric to weave. Here, I will explain with 60cm width. Example (About 70cm length and 60cm width)

(2) How to make tying cloth

① Draw a line 25cm from the edge of the tying cloth and sew two lines on a sewing machine.

② Mark the edge of the cloth sewn, make cuts at 3cm intervals, split off to the stitch to make strings.

③ Fold the other side of the cloth and sew a French seam at 2cm from the edge, and put the roller presser metal rod through.

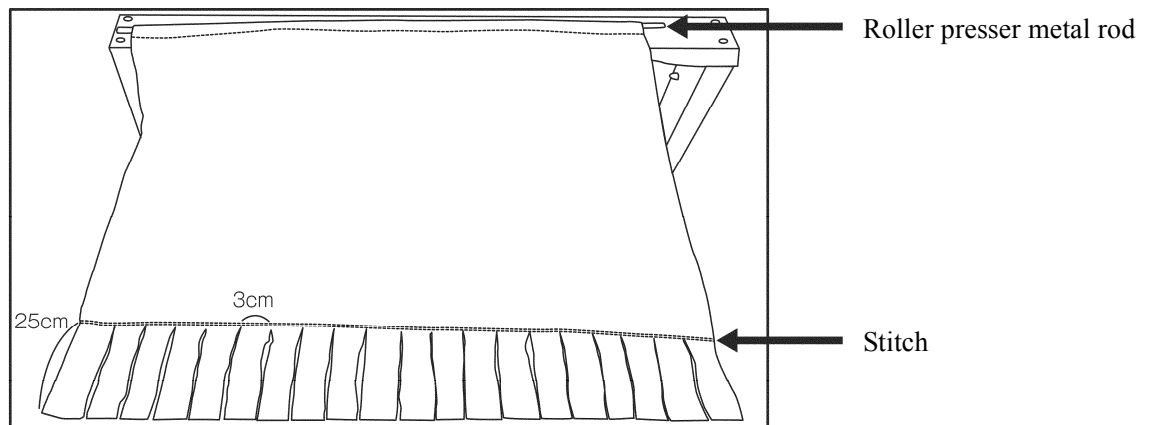


Figure 28. How to make tying cloth

2) Tie the warp yarns to the tying cloth

Put the tying cloth to the loom and tie the strings of tying cloth to warp threads. Bundle warp threads in the same width with the strings and tie them together. Decide the position of the strings on both ends to use.

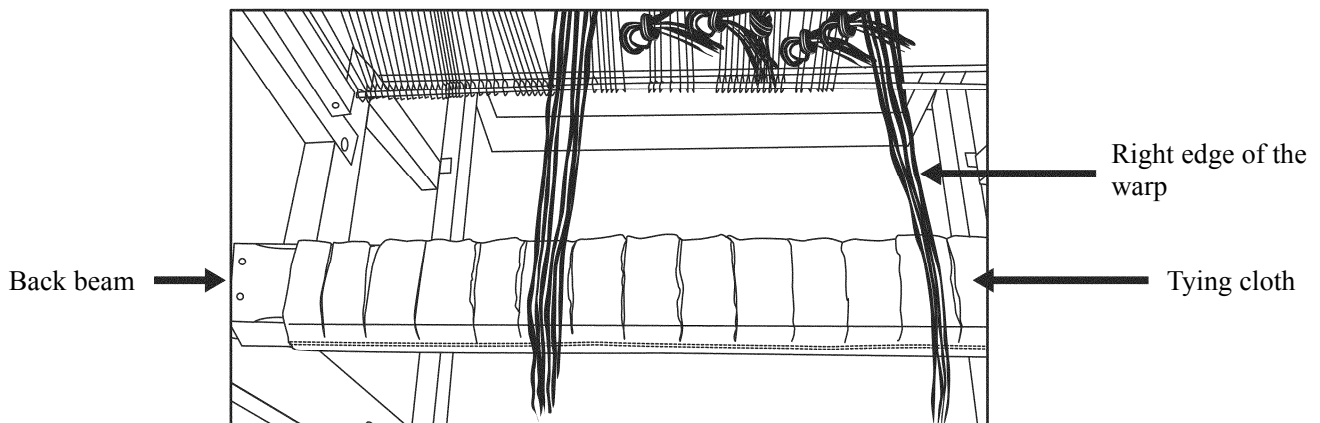


Figure 29. Position to tie the bundle of warp with the strings on both ends

There are some steps but it will be a half ribbon bow in the end.

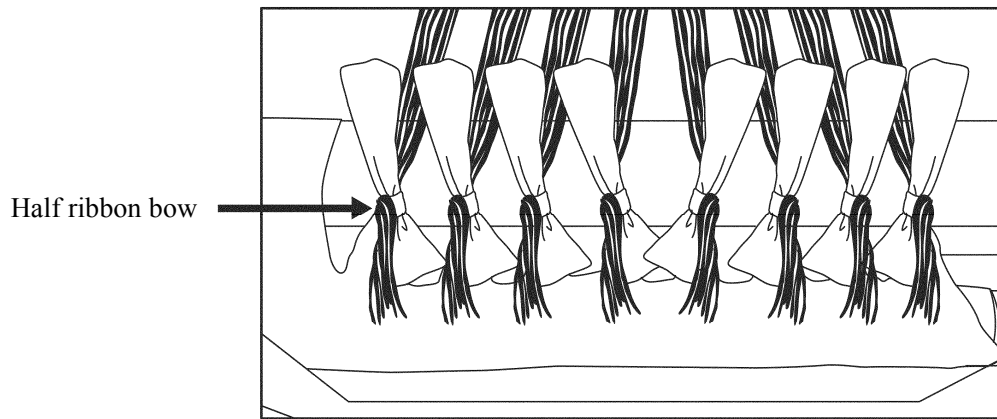


Figure 30. Tying to the tying cloth (half ribbon bow)

3) Final check of warp threads

- (1) Confirm the knot, stretch the threads, move the heddles up and down and check the status threading.
- (2) If you find any error, undo the knot and pass through them again.
 - ① Move down the heddle to check again to see if the threads are correctly passed through the reed and heddle in the right order.
 - ② Move down the other heddle and check the status of threads, and if there is any mistake, undo the knot and pass through them again.

4) Winding the warp

- (1) Wind up the warp onto the warp roller.
 - ① Confirm if the warp threads are correctly passed through the reed and heddle in the right order and wind up by inserting some paper. When winding up, keep the reed lean against the breast beam.
 - ② Carefully wind up by inserting some paper so that the warp threads come on the paper.
 - ③ When the threads tangle or you can't wind the threads smoothly during winding up, adjust the threads. Do it carefully, because if you forcibly wind them, the warp thread will be cut and become thin.
 - ④ When you finished winding up, tie the warp to the string of tying cloth on the warp roller. Now, as both ends of warp threads are tied, adjust the tension of the threads and tie them in half ribbon bow. When you finished tying, take final check of the tension of the threads. Users will feel safe if they can ask for cooperation from the supporters.

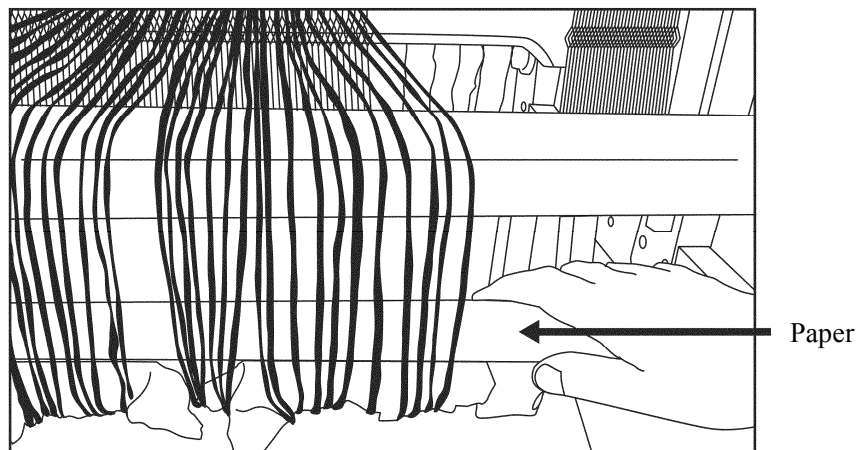


Figure 31. Winding up the warp threads by inserting some paper

5) Option of SAORI convenient for preparing warp threads (Most popular ones)

(1) You can wind up without moving over if you use the winding lever or automatic feeder.

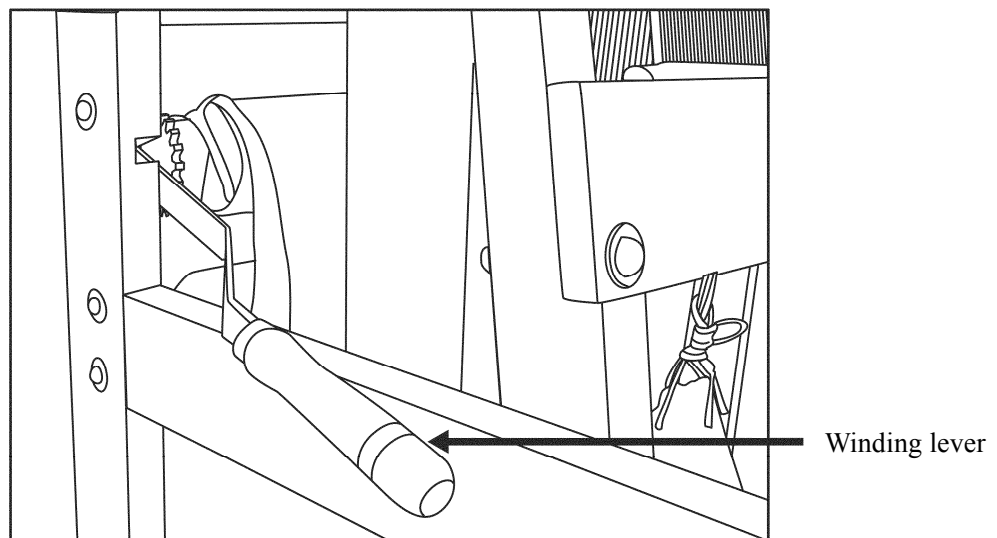


Figure 32. Winding lever

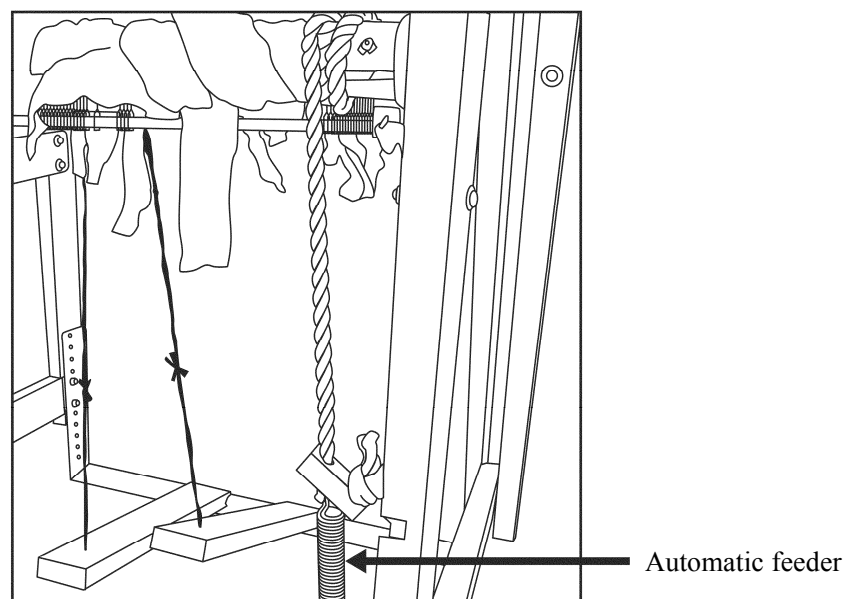


Figure 33. Automatic feeder

10. Winding of Weft Threads

1) Tools and ideas in winding weft threads (point of innovation)

(1) Treatment of the edge of threads in winding

When you wind in one hand, temporarily fix the edge of the thread, wind it several times, then take it up or continue winding. It is helpful to use a little ingenuity, such as cut grooves on the bobbin, put a clasp to nip them, or attach a clasp to the winder to tuck the edge of the thread.

(2) Idea for keeping the tension of the threads

If you put a light weight to the thread or pass the thread through a nut, the thread spins around the cone with a light weight and that keeps the tension of the thread. Devise measures of retaining tension in consideration of the thickness and condition of the thread.

(3) Idea in winding the threads to the length of the bobbin

It makes it easy to wind around the center of the bobbin. You need some idea as the user can't adjust threads while operating the handle with hands. Devise measures of winding the threads at the full length of the bobbin.

(4) Electric winder

- ① Use one hand to move the weft thread to the length of the bobbin, while the electric winder is winding the thread.

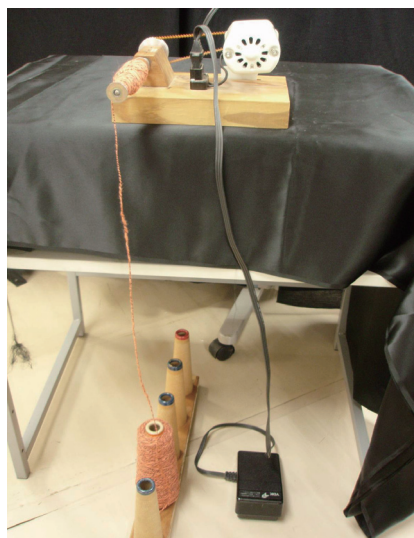


Figure 34. Inakubo Store original winder

11. Finishing

Even out the woven cloth.

1) Finishing of threads

Cut the extra threads and tuck the edge with threads into the cloth with a needle.

2) Fulling (Wash the cloth for finishing to shrink by entangling fibers)

(1) Tie the edge of the cloth or sew an edge-stitched seam. Cut the extremely long threads.

(2) Soak the cloth in lukewarm water or cold water to shrink and stabilize the cloth. For wools,

measure and compare the size after hand washing or machine washing for dress clothes for future reference. Align the width of the cloth in half-dry state and stabilize it by ironing.

(3) After drying in the shade, dry it further for cloth making. In this way, you don't have to worry about shrinkage in dress making.

(4) In cloth-making, give priority to make the best of the woven cloth without sticking to the original plan.

3) Texture of fabric after fulling

(1) Change in the texture after fulling

Depending on the state of weaving and material of yarns, the degree of shrinkage differs and the cloth might be wavy at its edge. Also, the cloth may shrink as a whole and the texture may change, and you might have to change the way of making cloth or its use.

4) How to use iron and how to iron the cloth

(1) Align the width of the cloth in half-dry state and run an iron.

① Be careful in the ironing temperature depending on the fiber and the texture of the cloth.

② Lightly press the cloth from the top to the bottom. The cloth will stretch when you slide the iron on the cloth.

③ For thin cloth or cloth with rough density, keep in mind the dimensions of finished cloth.

12. Introduction to a Variety of Weaving Techniques

1) Create the unique texture of handweaving

Machine weaving is good at producing uniform cloths and repeating a process in mass production. To create interesting effects of handweaving, pursue weaving with creative ideas that machine cannot imitate.

2) Change the design patterns

Avoid repeating same patterns, width of the stripes, etc.

3) Thoughts and ideas that cannot be made by machine-weaving

① Challenge what cannot be done by machine and create handweaving effects.

② Change the thickness of yarn, e.g., suddenly make them thick or thin.

③ Mix a bundle of threads with weft yarns and weave them together.

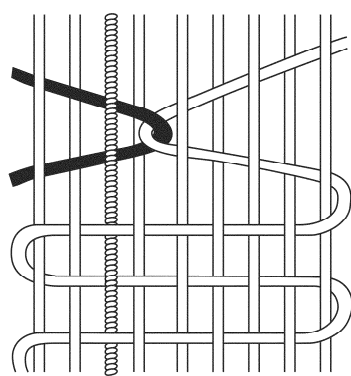
④ Occasionally weave without beating the weft yarn.

⑤ Pull out the weft yarn from the selvage and weave by making fringes.

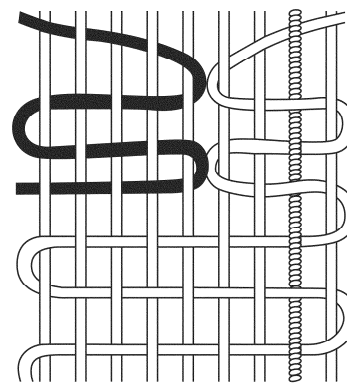
⑥ Create patterns by devising the way to tie threads, the way to beat the reed, etc.

4) Change in weft yarns

You can enjoy various ideas such as weaving with banding patterns and shapes, making aperture between yarns, etc.



Cross weaving



Aperture

Figure 35. Various weaving techniques

5) Change in warp yarns

Avoid repeating the same numbers in warping so that the colors and volume of stripe are not monotonous. Also, change the order of warping during slewing (to an extent the warp threads don't get tangled) to change vertical stripes.

Example 1: Tatami-ori (Japanese mat weaving).....An example of repeated patterns

Put the warp threads through the heddle in the order of front, front, back, back, and put the weft threads loosely and beat the reed strongly.

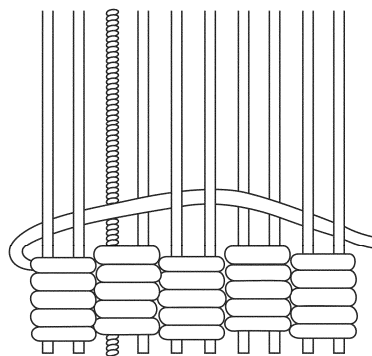


Figure 36. Tatami-ori

Chapter 4.

Introduction of Works

1. Works of User with Various Disabilities



Figure 37. Collaboration: Cats/Elephants
(Remnant clothes have been brought to life and become small figures)



Figure 38. Deaf Blind: Image of
autumn (cloth)



Figure 39. Cerebral palsy: Tapestry



Figure 40. Visual disability: Two-piece
(Total blind)



Figure 41. Collaboration: Bag, patchwork



Figure 42. Visual disability: Muffer
(Weak eyesight: First work)



Figure 43. Physical disability/
Higher brain dysfunction: Carpet



Figure 44. Deaf Blind: Carpet



Figure 45. Spinal cord injury: Muffer (First work)



Figure 46. Disorder of equilibrium: Tapestry

Chapter 5.

International Cooperation of SAORI

1. Spread of SAORI

The ideas and concept of SAORI, originated by Misao Jo when she was 57 years old, have given totally new ideas and inspirations of “*Monozukuri*” manufacturing to many people and the circle of people who were impressed and sympathized with it has been spreading.

It has spread throughout Japan and now SAORI handweaving and its concept is helping the recovery of body and mind of many people in 43 countries in the world. The stance is not to teach but to express subconscious personalities people have by nature, and live together.

We feel the weight in each word, and the sound, poem, and spirit that moves our heart in the will “to walk hand in hand and advance together,” “to make friends and accept each other,”

We share all the concept, technique, and information. Amid calls for coexistence and symbiosis, the 30 years of activity that perfectly matched with the times has been spreading from Japan to overseas as an idea and philosophy, healing of heart and spirit, and motivation in life.

2. International Cooperation of SAORI

The ring of network connected by its philosophy and heart has widely spread and won international sympathy including Asia, Europe, Oceania, North America, and South America, through our activities, such as support project for arts activity of the people with disabilities, fashion show in the UN resolution in the “Asian and Pacific Decade of Disabled Persons,” the activities of “NPO SAORI hiroba,” and the international aids efforts in Thailand after the earthquake in the Indian Ocean off Sumatra in 2004.

Conclusion

I have outlined the ideas, procedure manual, quick reference card, approaches, and innovations to substitute for handicaps that were practiced in the handweaving training for people with physical disabilities, but even if disability is called in the same name, the challenges and responses are different for each user. The difference is combined with the history of growth and environment, time/social background, personal problems, etc. We need to continue to deepen ingenuities and response to such individual problems in the future. At the same time, we will improve both hard and soft aspects of environmental adjustment issues considering the users as a group and the characteristics of disabilities. We will continue our study and improvement by keeping in mind that we will win the understanding of people with disabilities on the surrounding environment that will lead us to the building of a relationship to help each other. We hope to provide a training place that encourages people to grow as a “person who knows himself and care for others,” and a place to mutually help others to grow.

We hope to make it lead to better support, with which persons with disabilities, even if they don’t have courage today, will someday find motivation in life through SAORI weaving with a mind to help each other, hands to hold out, and hands to help. We also hope that we will receive many opinions on this manual from various fields as useful reference.

References

(in Japanese)

- 1 “My hand-weaving SAORI” by Misao Jo, Budosha, 1995, P.24, 43, 44, 46
- 2 “SAORI Small Step by Chiyuki Okuhara - Consideration on the small steps in learning the weaving process and the process of creating teaching materials - with CD-ROM” (Let’s learn the weaving process by looking at the images), Kashimura Printing Co. Ltd., 2004, P.14