

Helping Local Refugee Artisans

Supplementary Materials

This is the *Supplementary Material* for our Interactive Qualifying Project and was completed through the Worcester Community Project Center. This project was completed in collaboration with the Refugee Artisans of Worcester.



WPI

Worcester Community
Project Center

June 19, 2018

Faculty Advisor:
Laura Roberts

By:
Andrew Jalbert
Haozhe(Percy) Jiang
Jingyi(Betty) Liao

Abstract

Worcester Massachusetts is home to one of the largest refugee populations in the state. A subset of these refugees are artisans which rely on their craft to preserve their culture and identity. We worked with Refugee Artisans of Worcester to adapt floor looms for refugee weavers so they can continue their craft. Through our semi-standardized interviews, direct observations, and home visits with the weavers, we identified their needs in looms and understood the role weaving plays in their lives. Additionally, we assessed our resources and reached out to the community to gather necessary materials and information for loom adaptations. Ultimately, we adapted four looms, created an instructional video documenting our work, secured a donated portable loom for demonstration purposes, and contributed to the preservation of the refugees' culture and identity.



The picture was taken on the first day the team started modifying the first loom in Higgins Lab. Team members, from left to right, are Jingyi (Betty) Liao, Haozhe (Percy) Jiang, Andrew Jalbert, and loom construction advisor from WPI, Russell Lang. All of us were excited and nervous about the first day of work. This picture was taken by our sponsor, Joan Kariko.

Table of Contents

Appendix A: Authorship	1
Appendix B: Data Collection Instruments	2
- Data Management Plan	2
- Preamble	3
- Interview Questions for Home Visits	4
- Topic 1: Loom Construction	4
- Topic 2: Role of Weaving in Life	4
- Interview Questions for SAORI Visit	5
Appendix C: Table of Direct Observations of Weavers	6
Appendix D: Table of Participant Observations of Weavers	7
Appendix E: Table of Measurements of the Current Looms in Weavers' Houses	7
Appendix F: Table of Opinions on Limitations of Current Looms	8
Appendix G: Interview Notes	9
- SAORI	9
- Background Story	9
- About SAORI and SAORI Looms	9
- Weaver 1	10
- Weaver 2	10
- Weaver 3	10
- Weaver 4	11
Appendix H: Interview Data from the Social Aspect	12
- Table of Social Data	12
- Notes of Social Data	13
Appendix I: Interview Data from the Technical Aspect	14
- Table of Technical Data	14
- Notes of Technical Data	14
Appendix J: Table of Looms Data	15
Appendix K: Pictures of Looms Before Modification & After Modification	16
- Loom 1	16
- Loom 2	17
- Loom 3	18
- Loom 4	19
Appendix L: Link to our Final Project Video	20

Appendix A: Authorship

Chapter	Section	Contributor(s)	Editor(s)
Abstract	Abstract	Andrew Jalbert	All
Introduction & Background	Refugees Around the World	Jingyi (Betty) Liao	All
	Cultural Identity of Refugees	Jingyi (Betty) Liao	All
	Preserving Tradition	Andrew Jalbert	All
	Refugee Artisans of Worcester	Haozhe (Percy) Jiang	All
Methodology	Goals & Objectives	All	All
	Objective 1, Objective 2	Haozhe (Percy) Jiang	All
	Objective 3, Objective 4	Jingyi (Betty) Liao	All
	Objective 5, Objective 6	Andrew Jalbert	All
Findings & Results	Social Findings	Andrew Jalbert	All
	Technical Findings	Haozhe (Percy) Jiang	All
Acknowledgements	Acknowledgments	All	All
References	References	All	All
Supplemental Materials	Supplemental Materials	All	All

Appendix B: Data Collection Instruments

Data Management Plan

Please be aware that many of the subjects the students interact with are in the public eye, as their names, photos, and stories have been published to the RAW website:

<http://www.refugee-artisans.org/> and to the *Refugee Artisans of Worcester: The Path To Empowerment* booklet.

The contents of interviews and home visits will be written down on students' notebooks and no electronic devices will be used in interviews. Data will be transferred to a digital version on a password protected laptop. When the project is completed, paper copies of the data will be destroyed and the digital version will be deleted. Names of the interview participants will not be required during interviews. Personal information of the subjects will not be released publically and the weavers will be referred to as Weaver 1, Weaver 2, etc. or via false names in the project. Photographs will be taken of the looms used for the purpose of illustration in our final booklet. The photographs will be strategically staged so the weaver is not identifiable, which includes hiding the weavers face and other identifiable features.

Preamble

We are a group of students from Worcester Polytechnic Institute in Massachusetts and working in collaboration with Refugee Artisans of Worcester (RAW) to adapt large American floor looms into smaller, foldable looms for use by Bhutanese refugees. We are speaking with people to learn more about looms structures and the role of weaving in traditional Bhutanese lives. Data gathered will be analyzed and published without identifiable information. **We will not ask for your name or any other identifiable information.** You are free to pause or stop the interview at any time you want. You may refuse to answer any questions. Taking part in this interview is completely voluntary.

If you have any questions about this project, please feel free to contact us collectively at Wor18-RAW@wpi.edu. You may also contact our faculty advisor, Laura Roberts, at lroberts@wpi.edu.

Interview Questions for Home Visits

Topic 1: Loom Construction

1. How often do you use the loom and need to move it?
2. Does this loom break often? (Is it durable enough?)
3. Is the loom too tall or too wide?
4. Can you describe what aspects of the loom you like and what you would like changed?
5. [Selecting a part of the loom] What do you like or not like about this part?

Topic 2: Role of Weaving in Life

1. How long have you been weaving?
2. How long does it take you to make a textile/ piece of art?
3. What does this designed pattern mean to you?
4. What do you like about weaving?
5. Can you tell us a little bit more about what weaving means to you and your heritage?

Interview Questions for SAORI Visit

Date: May 15th, 2018

1. What inspired you to learn weaving? Why is weaving is important to you? How did you get started in Worcester?
2. What is your favorite weaving style or pattern?
3. Can we look at some of the looms with you? What is your favorite loom to use?
4. Can you guide us through how a loom works? (What does this part do? What happens if you remove this part?) Can we take some photos and measurements of the loom(s)?
5. What is the specific differences between foldable looms and non-foldable looms? Is one 'better' than the other? (If so,) In what ways?
6. For our project, we are trying to turn a non-foldable looms to a foldable loom. Do you have any suggestions for this?
7. Do you know any other loom constructors or someone you think that may helpful to our project we should contact?
8. Can we follow up with you if we have additional questions? How should we stay in touch?

Appendix C: Table of Direct Observations of Weavers

Date:	Weaver 1	Weaver 2	Weaver 3	Weaver 4
What apparent differences in style are there between their weaving and 'traditional' American weaving?				
Does the weaver have difficulty using their loom? If so, why apparently?				
Which parts of the loom seemed to function the best?				
How aggressively did they use the loom? Does the loom seem durable?				
What emotional state did weaving appear to induce in the weaver?				
Do the weavers utilize extra features in the loom such as a shelf or bobbin roller?				
What sort of patterns and motifs do the weavers use in their textiles?				
How much of the room does the loom occupy?				

Appendix D: Table of Participant Observations of weavers

Date:	Weaver 1	Weaver 2	Weaver 3	Weaver 4
How comfortable is the layout of the loom to us?				
Can this loom be moved easily by one person? Two or more?				
Does this [selecting part] function well with the weavers?				
Do they seem comfortable with us?				
Does this loom seem sturdy to us?				

Appendix E: Table of Measurements of the current looms in weavers' houses

Measurements (in cm; Kg)	Loom 1	Loom 2	Loom 3	Loom 4
Heights				
Lengths				
Widths				
Weights				

Appendix F: Table of Opinions on Limitations of Current Looms

Features	Loom 1	Loom 2	Loom 3	Loom 4
Overall Size (smaller[S], larger[L], keep[K])				
Overall Weight(S,L,K)				
[Selecting Parts] Size (S,L,K)				
[Selecting Parts] Weight (S,L,K)				
[Selecting Parts] textures (stiff/soft..)				
Other comments				

Appendix G: Interview Notes

SAORI

Background Story

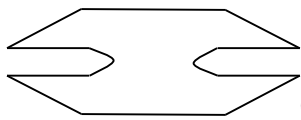
Ms. Wakabayashi likes arts, cooking, and crafting in general. She focused on education philosophy back in Tokyo. She worked at a special education program in one of Japan's "Democratic Schools". There was a loom at the place she worked and she got interested. She got married in America and has two children. She has moved back to Tokyo with her family but she was not completely satisfied with the education in Tokyo so she chose Worcester because of the unique arts and education environment. Additionally, her children are mixed race so the diversity found in Worcester was more welcoming than Japan at the time.

About SAORI and SAORI Looms

According to Ms. Wakabayashi, SAORI weaving is a free style of weaving, focused on individual creativity, sometimes referred as "Zen Weaving", and doesn't have a set goal or pattern in mind. For Ms. Wakabayashi, weaving also offers a form of spiritual fulfillment. The act of weaving is rhythmic and satisfying, especially after completing a project. Due to the way SAORI looms hold tension in the bar, the previous work on the textile is rolled up and hidden leaving the weaver to be 'in the moment'. This is important, as weavers are not focused on silently keeping count of their pedals but can instead talk and make noise in the studio without worrying about distracting others. Additionally, SAORI looms are more user friendly comparing to other traditional looms since they offer a simple but effective tensioning method, are portable and not too large, adjustable to the weaver's preference, and allow current projects to be taken on and off the loom at will. It was originally designed by the founder's son. He is a passionate professional weaver himself and engineer so he knows exactly which parts to fix and optimize.

Weaver 1

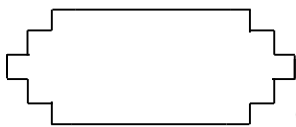
She has lived in America for about 3.5 years. She has been weaving about 6~7 years. She needs about a week to weave a scarf with traditional Bhutanese pattern on average. Her auntie showed her a lot of patterns when she learned how to weave in Bhutan. She remembered the patterns in her mind and interpreted them by herself. When she weaves, she creates her own weaving pattern. She used to spend 1 hour to 1.5 hour to weave everyday before work, or after school. Her life is busy so she has to squeeze time in to weave. She loves and enjoys weaving and feels good about it. Recently, she stopped weaving because the loom was broken. She's the only English speaker in the household which bears a lot of responsibility because she has to translate for everyone. Additionally, she currently has two part-time jobs which occupy a lot of time. There are a lot of things for her to manage and weaving is just one facet of her identity.



(sample of weaving pattern)

Weaver 2

She is from Nepal. She first started weaving when she was 20, about 15~16 years ago. She has been weaving for almost 5 years in Worcester. She has three children. She works full time at night so her working schedule is very busy. She usually weaves before going to work. She needs around a month or two to weave a scarf. She weaves Bhutan traditional pattern but she also makes slight changes to the pattern every time. She said weaving helps her to increase the household income. In addition, she likes weaving because she likes to make arts and have some hand exercises at the same time. Most importantly, weaving helps her relax and slightly exercises her body.



(sample of weaving pattern)

Weaver 3

She first learned weaving from her grandmother when she was a little kid and she has never stopped weaving ever since. She currently weaves for about 2 hours everyday. It would take her 2 to 3 days to finish a small piece of textile and around 2 months to finish a big piece of textile. She recalled that she used to do backstrap weaving as she showed us her traditional Nepal bag and demonstrated the form to backstrap weave with her bag. She likes weaving because she enjoys putting colorful string together.

Weaver 4

She first learned weaving from her brother's wife in Nepal and she has been weaving around 16 to 17 years. Her loom in Nepal was different from those in America. It was constructed of bamboo and was similar to the backstrap looms of that region. Six years ago, she met RAW and received a loom. However, she later stopped weaving because the loom was too large and heavy. She could not move it easily and it was tiring to use. The artisan stopped weaving for 4 years because the loom did not make the experience enjoyable. This was unfortunate to her because she liked weaving so much and was eager to weave. After some time, her interest in weaving came back and she kept asking RAW if there was a suitable loom for her to weave. She is a master weaver who likes to produce colorful textiles using considerably thicker yarn than other weavers. Other weavers try to use thin, tightly woven threads but this weaver prefers thicker threads partly because she "can see them better". Another difference is that she uses a proper warping board to check her threads before dressing the loom. The other weavers tie their wraps around a couch to see it (but this is prone to slipping off according to her). Weaver 4 is more "industrial" according to Ms. Kariko. The weaver said she can create two to three works in a day, which is considerably more production than the other weavers. Also, she said that weaving makes her happy. She likes to weave everyday unless she feels "lazy", but she would definitely weave on the next day.



(sample of weaving pattern)

Appendix H: Interview Data from the Social

Aspect

Table of Social Data

Questions	Ms. Wakabayashi	Weaver 1	Weaver 2	Weaver 3	Weaver 4
Why do you weave?	It's a form of expression. The act of making things is satisfying. Spiritual fulfillment. Rhythmic and relaxing.	It's fun and enjoyable. It's a break from work.	The act of making art is satisfying. Weaving is sort of a form of exercise. It's relaxing. Her works bring in extra income too.	It's a tradition. The act of making art is satisfying.	Weaving makes her happy, and provides a moment that she could only focus on herself.
How did you get started weaving?	Started learning when teacher at a school with a loom. Helped students weave.	Learned from Aunt in Bhutan. Kept weaving in America.	Used to weave in Nepal, also continued in Worcester.	Weaved in Bhutan since a little kid. Learned from grandmother and mother. Started on backstrap loom.	Her brother's wife taught her how to weave. Kept weaving in America.
How long have you been weaving?	Over 10 years	Around 7 to 8 years	Around 20 years	Many decades (likely over 40 years)	16 ~17 years.
How long does it take to make a piece on average?	(No Answer)	Between work and life, about a week or more. Would weave for 0.5 to 1 hours a day.	Needs about a month or more.	2 or 3 days for small piece. About a month for large piece.	2 to 3 days for a piece like length of scarf.
Does the next generation learn weaving from the weaver?	(No Answer)	Her mom taught her how to weave. She did not have a child.	(No Answer)	She taught her grandchild to weave.	(No Answer)
Besides	(No Answer)	2 part time	Full time work	Care for the	Full time work.

weaving, what else do you do?		jobs. Only English speaker in household; must manage household	and care for 3 children.	home.	
-------------------------------	--	--	--------------------------	-------	--

Notes of Social Data

- Only women weave.
- Weaving is just one part of their lives, and it often gets pushed aside due to work and other business.
- Typically, the weavers learn from older family members.
- Weavers enjoy making art, find it relaxing, have fun, and enjoy the extra income.
- Weavers spend many years doing their craft with no intention of stopping.
- Weaving is usually a tradition for the family.

Appendix I: Interview Data from the Technical Aspect

Table of Technical Data

Questions	Weaver 1	Weaver 2	Weaver 3	Weaver 4
Is the loom too big? Which parts are too big?	Too big. Wanted 2 shafts/pedals only. Every dimension was too big.	Too long, the front wrapping bar and the beaten bar were too high. Wanted 2 shafts/pedals only.	No.	/
Is the loom too heavy?	Too heavy	Heavy	No.	/
Are there broken parts of the loom?	Not really, but the parts of the loom were loosening and fall apart. Loom not used.	No. Shafts were a bit 'sticky' but not broken.	The shafts were 'sticky'. The beating bar was broken.	/
Do you have to move the loom frequently?	She had to move the loom from her bedroom to her living room to weave every time.	No. Only occasionally for events.	No.	Yes. She had to move the loom from her bedroom to living-room to weave.

Note: Weaver 4 did not have a loom originally.

Notes of Technical Data

- Both Weaver 1 and 2 wanted to have a loom that was smaller in length and height than their original one.
- The loom that weaver 3 had the ideal size for weaver 1, 2 and 4.
- Except weaver 3, weaver 1 and 2 wanted to remove all the excess pedals.
- The place for putting the loom was fixed for weaver 2 and 3, but not weaver 1 and 4.
- Overall, the weavers preferred small, simple floor looms.
- Having the loom portable and strong were the two main wants of the weavers.

Appendix J: Table of Looms Data

Measurements & Features	Loom 1	Loom 1 Ideal	Loom 2	Loom 2 Ideal	Loom 3	Loom 3 Ideal	Loom 4	Loom 4 Ideal
Heights (Inches)	43.9	/	41.5	No changed	/	/	/	/
Lengths (Inches)	43.31	29.13	35.5	23.5	/	/	/	32
Widths (Inches)	36.22	/	32	No changed	/	/	/	/
Pedals	6	2	6	2	4	4	/	2
Comments	The loom was too high, too wide, too heavy. Some parts were loosening, could not evenly beat. The floor loom occupied ¼ of the bedroom when unfolded.	Shrunk the whole loom. Wanted more foldable, and easier to move.	The height of holding bar was 32 inches from floor. The length of this bar was 31 inches. The height of the beating bar was 36 inches.	The height of holding bar needed to be 29 inches. The length of this bar needed to be reduced 5~6 inches. The rug on loom could be inclined. Shelf could be added.	Broken beating bar. The length of the reed was 20.5 inches. The shafts were sticky.	The reed needed to be 27 inches long. Needed more heddles. Needed to lubricate or replace the cords.	Weaver 4 did not have a loom.	Wanted to have a standard 32 inches' foldable loom with 2 pedals. Wanted to have wheels. Needed a wrapping broad.

Appendix K: Pictures of Looms Before Modification & After Modification

Loom 1



Before Modification

Note: The reduction in number of pedals and shafts and additional of wheels (casters) on the bottom of the loom.



After Modification



The loom that weaver 1 originally had. Note that this loom was replaced by the loom on top left which was donated by the Worcester Center for Craft.

Loom 2



Before Modification



After Notification

Note: The reduction in number of pedals and shafts, the reduction in overall size and additional of shelf on the top of the loom.

Loom 3



Before Modification

Note: The repair on the left side of the beater bar and additional of wheels on bottom of the loom.



After Modification

Loom 4



Before Modification



After Modification

Note: The reduction in number of pedals and shafts, additional of wheels on the bottom of the loom and additional of shelf on top of the loom.

Appendix L: Link to our Final Project Video

Link: <https://www.youtube.com/watch?v=EP04vjQPMvg&feature=youtu.be>