THE DIGITIZATION OF CORDILLERA WEAVING: DESIGNING A NEW ORAL TRADITION

RACHEL KELLY
MICHELLE STEPHENS

THE DIGITIZATION OF CORDILLERA WEAVING: DESIGNING A NEW ORAL TRADITION

Abstract

This chapter is a reflection on the 2019 British Council & Crafts Council / Crafting Futures project which enabled a collaboration between CordiTex and Manchester School of Art to support the future digitization of Cordillera weaving tradition. The Creating a Sustainable Textile Future for Women via the Digitization of Cordillera Weaving Tradition (CSTFW) project, has developed a Learning Framework, Learning Tool Kit and Design Tools to support the preservation of a weaving tradition of the Cordillera region of the northern Philippines. The British Council & Crafts Council/Crafting Futures Crafting scheme supports projects which address "...a sustainable future for craft around the globe". It has been identified that while Cordilleran weaving has the status of National Heritage within the Philippines, the numbers of community weavers able to practice is dwindling. The Cordillera Textiles Project (CordiTex) led by Professor Analyn Salvador-Amores from University of Philippines Baguio, is proposing to digitise Cordillera Weave Tradition to ensure its sustainability, study and preservation. This chapter will present findings from the CSTFW project, which raise the voice of oral craft traditions via a consideration of heteroglossia which is a term, defined by Mikhail Bhaktin (1895–1975) which describes the relationships between different voices and points of view, which can be heard within authored works such as hand woven textiles. The digitisation of the Cordillera oral tradition raises questions around authorship, voice and the role multiple voices play in oral traditions and their discourses. If the weaving tradition of the Cordillera is to endure and transform from the problems it faces, what type of support will the shift from of an oral to a digital tradition require?

In the Cordillera region, there is a rich tradition of weaving going back for centuries. The Cordillera weaving tradition occupies a niche, that is cultural, functional, and which represents the artistry of indigenous weavers in the region. The major indigenous groups in the region (Bontok, Ifugao, Kalinga, Tinguian, Kankanaey, Apayao, Ibaloy) have unique weaving styles with forms and patterns dictated by distinct religious, socio-political and artistic origins, functions and values. The uptake of weaving amongst younger women and the knowledge of weaving techniques, pattern structures and traditions are diminishing in the Region. Weaving knowledge is not held in a written form but is passed on via an oral tradition where the holders of this knowledge are mainly elderly women who are named within the communities as 'Master Weavers'. The impact of the oral tradition as an unwritten knowledge base for Cordillera weaving is now in a critical state, where the tradition may become extinct. The CordiTex project rationale is to preserve Cordillera Weaving Tradition via the digitization of the weaving patterns. The development of a digital rationale is explored within this chapter.

> "The focus of the CordiTex research was conducted among the Tinguian of Abra in northern Luzon, who had scarce documentation of its weaving tradition, but revealed the most intricate designs based on the collections from the museums in the US. The weaving declined in the 1980s, and only one Tinguian community in Manabo, Abra is still weaving, and natural dyeing is revived in Penarubia, Abra. Most of the master weavers are elders and many who passed away without transmitting knowledge to the younger generation" (Salvador-Amores 2018).

The Creating a Sustainable Textile Future for Women via the Digitization of Cordillera Weaving Tradition (CSTFW) project was divided up into five parts of work:

Part 1: Study of the traditional weave samples within the Museo Kordilyera, UP Baguio; The National Museum of Philippines in Manila and National Museum of Vigan in Ilocos Sur.

The collections within the museums visited are significant in terms of their rarity in anthropological terms and include examples of weaving tools, back strap and foot looms, ritual artefacts and historical ethnographic photography. A second purpose for the museum visits was to examine Cordillera textiles first hand to explore the weave structures via a process of draft notation or weave drafting.

> "...draft notation uses graph paper as a framework. The space between its evenly spaced verticals is understood to indicate the warp threads, that between the horizontals, spaced similarly and intersecting at right angles, the filling threads. The little squares thus formed denote the intersection of warp and weft... of course more than the thread construction has to be identified in the analysis of a cloth...when these facts have been established, all the information required for the reproduction of a cloth has been ascertained, for the procedure of weaving is merely a matter of inference" (Albers, 2017: 22).

Part 2: Field visits to weaving communities in Kiangan (Ifugao), Manabo (Abra), Santiago and Mindoro (Ilocos Sur).

The aim of the field visits was to gain an understanding of the research problems posed by the Crafting Futures project which asked projects to research 'the potential of craft to improve the livelihoods of women' (British Council, 2018). Qualitative research activities to capture evidence and data for the CSTFW project, included community, field and weaving practice observations, ethnographic interviews and documentation by film, sound, and photography. The visits also gave the project partners the opportunity to introduce the CordiTex and CSTFW project to the weavers and their communities.

Part 3: A Learning Tool Kit Development Workshop held at The University of Philippines in Baguio.

A Learning Tool Kit Workshop was designed to enable a cross section of key stakeholders to be reached directly. The workshop was organised with much support from the University of Philippines Baguio and the CordiTex team. Key stakeholders travelled from remote and diverse locations across the region and Philippines to attend, and the workshop included activities which enabled the CSTFW methodology to be enacted, including a Design Thinking (Cross, 2011) workshop, a weave Drafting workshop and a collaborative reflective plenary.

Part 4: Dissemination of Learning Tool Kits to weavers and stakeholders in The Philippines.

The Learning Tool Kit will be designed, developed and produced by the UK partner team on return from the Philippine field visit. The form of Learning Tool Kit will depend on the Design Thinking Cycle outcomes which arise during the materialization phase of the project. Ideas include the creation of a weave drafting app to enable the teaching and learning of weave drafting, QR code links to online videos and the provision of a small sample loom to enable apprentice weavers to practice and learn weaving on a smaller scale. The kits will be sent to stakeholders prior to the CordiTex exhibition in October 2019.

Part 5: The Digital translation of Cordilleran Patterns via TC2 Digital Loom.

The digitization of a selection of woven samples from the collection of the CordiTex and the Museo Kordilyera archive will be translated by Dr. Michelle Stephens from Manchester School of Art. Fabrics produced will and be documented and will be used to inform the development of the Learning Tool Kit. The samples will then be exhibited at the Museo Kordiyera in 2019 and added to the museum's teaching collection.

The five parts of work which formed the project methodology became a suite of contexts within which both new knowledge development could be identified, and data could be collected. Decisions on how best to plan the project were made based upon factors including the need to pre-plan at a distance from the Philippines prior to field visit; The short timeframe for the field visit (8 days), the urgent need to document of the oral weaving tradition and examples of weaving practices evidenced within the field communities visited.

Figure 1. The polyester Figure 1: Manabo Community Weavers participating in a weave drafting workshop, January 2019 fabric used for the plasma treatment in this study.

The theoretical perspectives employed were phenomenological and ethnographic, so methods included observation, participation and deep hanging out (Geertz 1998) where partners were introduced and took the role of fellow textile practitioners and weavers. A Design Thinking Cycle (Cross, 2011) was employed as an evaluation methodology to move the research from Understanding to Exploration and Materialization. A Theory of Change (Nesta, 2018) model was also utilised to inform the project framework and to help identify the project research questions, aims and outcomes. Within the understanding phase of the project, the examples which follow, demonstrate findings which resonate with the question of this paper as to what the move from of an oral to a digital tradition mean to the Cordillera and the future of global craft tradition?

Prior to January 2019, archive textiles images were sent to the UK project partners to illustrate the breadth and depth of variation in designs of the different Cordillera communities. The textiles had already been documented as part of the CordiTex project and the images provided an insight into the general patterns, cloth construction, patterning and colouring of the different regions. Visits to the Museums and archival collections highlighted the meaning and taboos held within the textiles and via related artefacts, photographs and cultural objects. The woven textiles are used as ceremonial cloths, burial cloths and clothing. The level of denotation of the cloth and/or their motifs was dependent of the group's own heritage. Initially, to the partner team as outsiders, the cultural value placed upon these cloths was overwhelming and difficult to comprehend. The society of Cordillera Indigenous groups was traditionally "a society made up of small, dispersed, relatively egalitarian and acephalous, rivalrous groups, with an oral rather than written history and a reputation for wildness (e.g. headhunting)" (Rosaldo,1980). Following the field site visits to meet the weavers, the close link between the museum collection and the connection to the communities visited became clear. A remarkable moment came when community weavers were taken into the CordiTex archives to view the work of their ancestors. This moment sits as a Learning Threshold (Meyer and Land 2003, 2005) crossed, because the weavers were able to learn and reflect upon the heteroglossia of their past, present and future voices present within the archive.

In order to undertake a deconstruction of the patterns, it was vital for the partners to have first-hand interaction with the textiles to gauge cloth weights and colour. The weave translation process was conducted using the following methods:

- Technical notes
- Thread counts
- Photographic documentation
- Production of woven drafts

Figure 2: Workshop participants visit the cordite project archive at Museo Kordilyera at UP Baguio (Photograph by Arnold Amores, 2019).

Figure 3: Weavers visit the Feasts of Merit exhibition at Museo Kordilyera at UP Baguio (Photograph by Arnold Amores, 2019).

It must be noted that Drafting can be undertaken by any weave specialist or keen novice and is a binary language which can be translated by both hand and digital weave methods. The implication is that the draft process can create a disconnection with the original weaver. A concern of disconnection was raised during the Learning Tool Kit Workshop by Mr. Marlon Martin from the Ifugao Heritage Weaving Center and Ms. Adelaida Lim, the president of the Habi Textile Council in the Philippines. The concerns raised have formed part of the rationale for this paper to scrutinize investment into digital methods within the Cordilleran weave tradition context.

The Digitization of textiles is a growth area of Textile Design and conservation with work being undertaken at The Centre for Advanced textiles at Glasgow School of Art (Britt and Shaw, 2014) and by Anna Buruma who led the digitization of the Liberty of London archive (Buruma, 2007). Such examples of organised digitization have been undertaken a priori in that the digital translation has been made at a distance in time from the original textile making. The work of the CSTFW and CordiTex project can be done posteriori because the textiles are still, at the point of the writing of this paper, being made, so actual observable practice can be observed, documented and responded to.

The CSTFW project and Learning Tool Kit proposes to directly address any trouble or concerns with regard to authenticity (Adorno, 1973:7) because the Kit will empower weavers to author the process of translation themselves. To place control of the Draft process in the weavers' hands, an authenticity, which if placed under the philosophical lens of Adorno (1973), locates the culture of weaving within its historical process and thus challenges the mystification of an unauthentic translation methodology might create.

Visit to the Ifugao Indigenous Peoples Education Centre and Community Heritage Galleries in Kiangan.

This Centre could be described as a Living Museum because the centre features a weaving workshop where traditional backstrap looms and Ikat warp dyeing methods are practiced. The centre is organized to receive tourist visitors to purchase textiles and observe demonstrations. The Ifugao Indigenous Peoples Education Centre and Community Heritage Galleries are run by Mr. Marlon Martin who is also Chief Operations Officer of the Save the Ifugao Terraces Movement (SITMo), which works to preserve the traditional rice terraces of the Cordillera.

Ifugao society is still organized in a system where the *kadangyan* members sit at the top of the community as the most privileged class. Mr. Marlon Martin comes from the kadangyan class and his sympathetic approach as centre director is supportive of the underlying traditions of his community where the privileged always share their rice with the *nawotwot* the landless poor at the bottom of this tribal system (Tolentino, 2018). Martin has a sense of social justice, which despite his position at the top of this society, works hard for the preservation of Ifugao culture and to improve the livelihoods of the local community.

Our visit to Kiangan and our second meeting with Mr. Marlon Martin at The Learning Tool Kit Workshop was informative to our learning and understanding of the societies and tribes of the Cordillera and the origins of the indigenous weaving tradition.

- The Ifugao centre provides a support system for weaving where women work as independent master weavers, choosing their own hours and sell work as sold rather than by employment.

Figure 4: Master Weaver in Ifugao (Photograph by Arnold Amores, 2019).

- Women work side by side on backstrap looms where they talk and share, learn and teach together in an oral tradition.
- The centre welcomes students and academics to study on site so the ethos of this weaving community is being exported and disseminated.

Martin's reflections shared both in Kiangan and at the Learning Tool Kit Workshop are that his community is vulnerable and weavers live below the poverty line. He identified that their tradition is however very much 'alive' now and should not be viewed through a lens of history or as a relic of the past. Martin and the Ifugao weavers maintain the oral tradition as a foundation of their culture where the tensions between the central role of textiles within rituals, birth, feasts and funerals in this community conflict with the mainland of the Philippines and the wider world. Martin is somewhat ambivalent as to the introduction of the digitization of weaving or the drafting process, but was in no sense closing the door to the developments the CordiTex project is proposing. A co-weaver who participated in the Learning Tool Kit Workshop reflected 'that cloth can also mean gold to the Ifugao' so any development which supports their community to trade textiles or textile knowledge, for her is very welcome.

Visit to Manabo Weavers Association in Manabo, Abra:

The Manabo community has a status and history that places it in a superior position in the hierarchy of weaver communities and culture, due to the complex weaving patterns and fine cotton used. Paradoxically, it is now in the unfortunate position of being the community most at risk from the weaving tradition dying out. Manabo is a new village still under construction, mainly consisting of breeze-block houses with foot weaving looms housed in a garage. From what we were told, the village had moved to this new location from their traditional area due to a change to growing tapioca rather than rice.

Figure 5: Manabo weavers drafting their weaves in their weaving garage (Photograph by Arnold Amores, 2019).

The women weavers we met were all united in their view as to why weaving was declining in their community via specifically, the lack of interest in young women to become weavers. The decline in weaving take up means that the end of weaving in the community will come when the older Master Weavers we met with die.

A shift in the dynamic of the visit came when the partners delivered an impromptu weave drafting workshop in a garage space. Dr Stephens introduced the weave Drafting process and showed examples of her work to the weavers on her mobile phone. Each weaver became fully engaged and interested in the process and was fascinated in the manner in which they could Draft their weaving. Master Weaver Teresita Obingayan embraced the process and worked fast with quick marks, where other weavers worked slowly or precisely. This may reflect the master weaver's tacit knowledge of the patterns.

The Drafting process became an expression of signature, where each weaver became the author of their Draft just as when on the loom they are the writers of their cloth. The weavers saw the potential to adapt or subvert the patterns to enable the expression of different ideas. The workshop which took place in the small garage space captured a sense of future potential which the drafting process and Learning Tool Kit will hopefully enable.

The concerns of the Manabo weavers are the lack of young people prepared or interested to take up weaving. There was a sense of despair that this was the situation. With this group in particular, the potential of weaving to be a good source of income needs to be communicated. The contrast between the lack of space in the garage with the 'packed-in' looms with the freedom of space the Draft process enabled was startling. The workshop ended with the weavers, sat outside in the fresh air at an outdoor table with the women continuing to draft their patterns after the project team had left.

Figure 6: Manabo weavers drafting their weaves at an outside table (Photograph by Arnold Amores, 2019).

Visit to Local Weavers in Mindoro near Vigan, Ilocos Sur:

A visit was arranged to meet three elderly weavers in their homes in Mindoro a village near to World Heritage City Vigan in the Illocos Sur area. The weavers were 85-year-old Catalina "Talin" Ablog, 79-year-old Nena "Ibing" Aganon, and 75-year-old Felicitas "Petra" Espejo. In the first home we met master weaver Talin who is working in a home where she had lost sec-tions of her roof in the December 2018 typhoons. The team also met Shara Lyn Ablog, an apprentice weaver granddaughter, and this was the only time a young person was observed weaving.

There were aspects of high levels of actualizing (Maslow, 1943) experience demonstrated by these weavers in that they work independently, and they are masters in their craft. The man-ner in which the weaving has been a central part of their family's communities and the oral tradition which has enabled the weaving to be passed on is remarkable.

Concerns for the Mindoro women are their very low income. Well-being comes from the act or ritual of weaving rather than the income generated. Being a weaver is the identity taken by these women and they demonstrated this via:

- Their independence;
- Their work from home;
- Pride via photographs of work in the home;
- Participation in education projects;
- Family support structure and the connectiveness across generations;
- Direct selling;
- Peace at work – one weaver described her loom as 'her office'.

Figure 7: 85-year-old Catalina "Talin" Ablog Weaving a Binakul Cloth at home in Jan 2019

Figure 8: Apprentice granddaughter of 85-year-old Catalina "Talin" Ablog weaving on her own loom at home in Jan 2019

Visit to the local weavers at home/workshop in Santiago, Ilocos Sur:

While this visit was short in duration and no workshop was carried out, the Mindoro community demonstrated a highly proficient level weaving work and commercial potential due to quality, range of colours, scales and patterns observed. The weavers work in pairs with one weaver was at the back of the loom switching the shafts, the other main weaver was at the front of the loom producing the cloth as normal.

The weaver at the back was responsible for changing the pattern for the weaver at the front by lifting specific sticks to create varying sheds at the front of the loom. They establish a rhythm, working in sync with one another. This is difficult thing to do and requires not only the pair of weavers to be in sync with one another, but with the loom also.

The level of tacit knowledge and skill observed in this weave workshop is notable in comparison to other site visits. This workshop environment was a concern, in particular, the proximity to the sea and the visibility of an open drain running through the workshop/home. The team reflected that the organization and capability of these weavers is not matched to their material circumstances and we asked within such circumstances the benefit digitization can play here? Two apprentice weavers took the opportunity to travel with the research team in their van to attend the Learning Tool Kit Workshop in Baguio where they were captivated by the methods introduced.

Figure 9: Sabangan weavers working in a pair in Jan 2019

The Learning Tool Kit Development Workshop at UP Baguio:

The Learning Tool Kit Development Workshop at The University of Philippines in Baguio was attended by Thirty-Five participants from The Northern Cordillera villages to academics and textile stakeholders.. The methods used in preparing for the Learning Tool Kit Development Workshop reflected a pedagogic process to most effectively meet the project aims and collect the data required.

Figure 10: The Learning Tool Kit Workshop at University of Philippines in Baguio held 19th January 2019 (Photograph by Rachel Kelly).

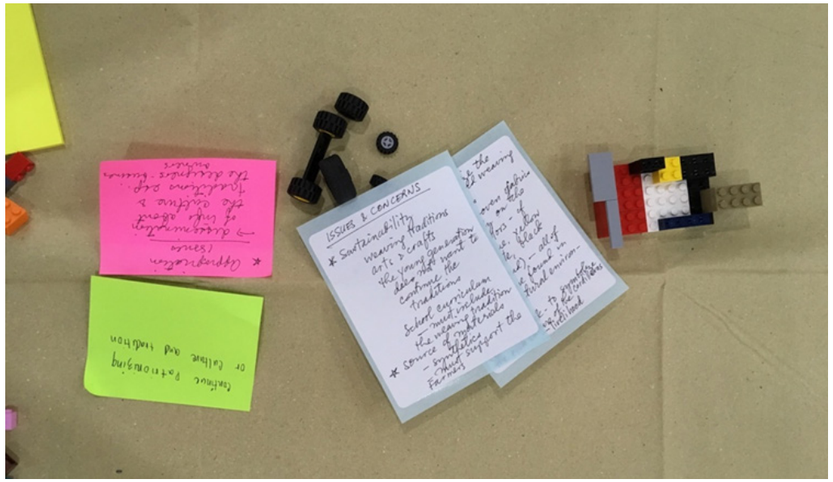

Figure 11: A Lego loom visualisation and reflection on weaver concerns, Jan 2019 (Photograph by Rachel Kelly).

A method for the multilingual multi stakeholder workshop was sought which enabled inclusive participation. A Lego Visualisation method (Lego®, 2015; Blair and Rillo, 2016) met the aims of the workshop because visualisation enables reflection through objects, rather than solely verbal response. It has been evidenced that objects can be used to visualise concepts and thoughts as they create a reflective space between a person, their thoughts and their discourses (Gauntlett, 2011; Kelly, 2017;).

> "...significant symbols – words for the most part but also gestures, drawings, musical sounds, mechanical devices... anything that is disengaged from its mere actuality and used to impose meaning upon experience" (Geertz 1973, p45 in Crotty 1998 p53)

The effects of the Lego® method are that simple questions can be used to generate meaningful qualitative data. The method was chosen to replicate how oral teaching and learning works by supporting the discourse to evolve and for this process to be evidenced as a group experience. A set of simple questions were posed under three headings: Place, Knowledge and Concerns.

> "Use the Lego to describe a place which is yours... tell us something only you know about Cordillera Weaving Tradition... what most concerns you about the preservation of Cordillera Weaving Tradition?"

The findings from the workshop identified that weavers only practice within an:

- Oral tradition.
- Community setting where knowledge can be passed and exchanged in a structured manner via master weavers to apprentices.
- Supported Heritage Organisation.

The oral tradition by which weaving knowledge is passed on by female master to apprentice weavers connects with and supports all of the Cordilleran communities by way of the maintenance of their living culture. The practice of weaving has been an unstated support system for these communities and the value of weaving to sustain and maintain such communities most likely reaches far beyond what is currently recognised.

As part of the Learning Tool Kit Workshop, participants were taught to Draft their weaving via a stage by stage workshop which deconstructed, deciphered and taught the drafting of weave structures. The community weavers are completely adept and knowledgeable Masters of their craft but this was a first-time learning experience for all participants.

Participants expressed their revelation via the closing workshop plenary at being taught something new. Drafting is the Threshold Concept (Meyer and Land 2003, 2005) required to enable digital weaving to take place because it translates woven cloth into a binary language. By stepping through a knowledge portal, a seed

was sown which may flourish like paddy field rice. For the Master and apprentice to develop their oral tradition via the Draft process, their knowledge can inform a digital language which might contribute to support and secure livelihoods and ultimately, the future of their communities.

Exploration/Initial findings

- The oral tradition requires someone to receive the learning and teaching and accurately and to remember this knowledge at a future date. If there is no listener/relater then the knowledge ceases to exist.
- The oral tradition is geographically defined (within the examples given) but can be exported to other settings e.g. other communities or learning spaces using digital media/phones as seen in use within communities and at the workshop.
- The oral tradition places a burden/responsibility/stewardship on families and communities to maintain and transfer knowledge, when its use both economically and socially may not be to the immediate or future benefit of individuals and communities involved.
- The economic benefits gained via the external preservation of the tradition via digitization may not be passed back to the community.
- The oral tradition benefits where learning is situated in a particular environment which recognises the social relationship between Master and apprentice or within Cordilleran societies from grandmother to daughter or grandchild (Lave and Wenger 1991).
- The oral tradition results in the work evolving and being autonomously owned by the community that creates it, giving status to the weavers as stewards of this knowledge.

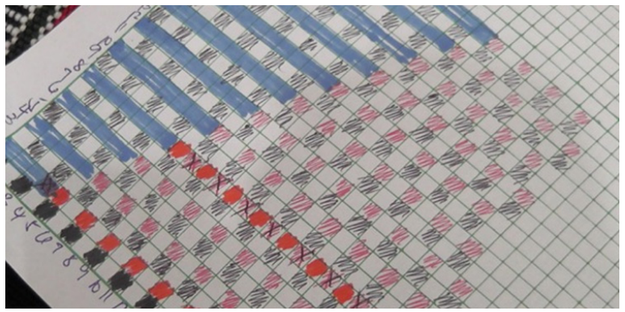

Figure 12: A weave draft created during Learning Tool Kit Workshop, Jan 2019 (Photograph by Michelle Stephens).

Figure 13: 'Mam' Master weaver speaking during the reflective plenary at the Learning Tool Kit Workshop, Jan 2019

- The teaching of weave Drafting methods may encourage a sustainable weave learning framework to evolve.
- The weave drafting process and the route to digital production may offer a new avenue for the future culture of Cordillera Weaving Tradition.
- The Drafting and digitization process are methods which could be used to inspire young future weavers.
- The ability to record traditional patterns and develop new designs via the Drafting method was positively received during the CSTFW activities.

Conclusion

Our project has a number of exit points which indicate that there will be a future or extinction of Cordillera weaving tradition. Elderly community weavers are, and will be the last generation to pass on their knowledge in an oral tradition. Weaving knowledge has maintained the indigenous oral tradition where master weavers teach apprentices, but the weaving tradition is now in a critical state as the elderly weavers are dying.

What has been identified by this project is an observation and concern around the move from of an oral to a digital tradition and what this shift might mean to the different groups of weavers concerned?

The CSTFW project captured the voices of the elderly 'Mams'; their young apprentices; customers; educators and the field of global textile culture which includes the Crafting Futures British Council Project audience. The mams and apprentices are both supported and held in place by the supportive forces, but what they are saying is audible only in the current echo chamber created by the oral tradition and the systems which support it.

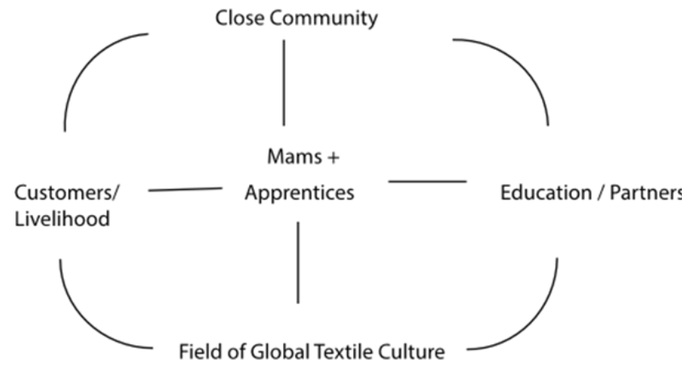

Figure 14: Diagram to illustrate the oral tradition echo chamber, R Kelly 2019

The pressure upon the Cordilleran weavers is great because they are working to meet the needs of all the different agencies surrounding them and they are also facing demise of their culture and tradition. The weavers were able to articulate and find a voice within the workshops and visits undertaken for the project and their voices spoke of the positives of their weaving tradition, where:

> *"Weaving is based in or near the home and that being at home or with their family and community is an important part of their weaving experience....*
>
> *The settings for the weavers play a large part in the feeling of well-being and empowerment and contributes to the continuation of their work...*
>
> *On completion of weaving, the women would gather outside their homes under the trees and 'wind down' and talk together. This is an important part of the weaving process. One weaver described the time after weaving time as 'peace'. It was striking how positively the weavers viewed their weaving activity....*
>
> *All participants are proud of the weaving tradition and described how it maintains a sense community identity through use of local patterns and designs, promoting their particular values and religious meaning. One weaver described her work as simple, in harmony with nature and that she was working to please God....*
>
> *The value of weaving as a source of income now that typhoons were occurring across all seasons, making work in the rice fields less dependable and more dangerous, was mentioned often."*

(Reflections taken from the plenary of the Learning Tool Kit Workshop UP Baguio 2019).

What was observed by this project was an ideal of weaving practice which places the women weavers at the centre of their communities and supports the sustainability of indigenous cultures and their land. The patterns of the Cordillera only take on meaning when they are spoken or woven. The woven cloths of the Cordillera become a language of weaving which enables an eternal conversation to take place between the indigenous community ancestors and the current stewards of this unique tradition. The Cordilleran weavers know and understand their world through the practice of weaving. The peace of work which the oral tradition of teaching between Masters and apprentices creates, is a richness this culture and society own. Therefore,

the introduction of the digitization process, if placed directly into the hands of the weavers via a sustainable learning framework and drafting process, could support a new oral tradition and sustainable weaving future for the Cordillera.

Figure 15: A selection of participants from the Learning Tool Kit Workshop and project team (Photograph by Arnold Amores, 2019).

References

Albers, A., Weber, N. F., & Cirauqui, M. (2017). On Weaving: New Expanded Edition. Princeton University Press.

Adorno, T. (1973) The Jargon of Authenticity. London: Routledge & Kegan Paul Ltd.

Blair, S., & Rillo, M. (2016) Serious Work: How to facilitate meetings and workshops using Lego®Serious Play® Method. Promeet.

Britt, H., & Shaw, A. (2014). Transitioning between Industry and Education: The Centre for Advanced Textiles (CAT) Case Studies in Digital Textile Printing.

Buruma, A. (2007). The library as muse: using Liberty's textile archive 1. Art Libraries Journal, 32(3), 32-35.

Cross, N.; (2011) Design thinking: understanding how designers think and work. Oxford, Berg.

CordiTex (2018) Executive Summary. University of Philippines, Baguio City.

CordiTex (2018) Study Brochure. University of Philippines, Baguio City

Gauntlett, D. (2011). Making is connecting: The social meaning of creativity, from DIY and knitting to YouTube and web 2.0. Cambridge: Polity.

Glover, D & Stone, G.D.; (2018) Heirloom rice in Ifugao: an 'anti-commodity' in the process of commodification, The Journal of Peasant Studies, 45:4, 776 804, DOI: 10.1080/03066150.2017.1284062

Kelly, R. (2017). Ikebana: a collaborative design pedagogy. The Design Journal, 20 (sup1), S1093-S1105.

Lave, J.; Wenger, E.; (1991) Situated Learning. Legitimate peripheral participation, Cambridge: University of Cambridge Press

Lego® www.lego.com/enus/seriousplay/trademark-guidelines
Maslow, A.; (1943) accessed https://www.learning-theories.com/maslows-hierarchy-of-needs.html
Meyer, J.H.F. & Land, R., (2003) 'Threshold concepts and troublesome knowledge (1): Link-ages to ways of thinking and practicing within the disciplines. Improving Student Learning – Ten Years On. C. Rust (Ed), OCSLD, Oxford.
Meyer, J.H.F. & Land, R., (2005) 'Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning'. R. High Educ 49: 373. doi:10.1007/s10734-004-6779-5
NESTA Theory of Change method (accessed via https://www.nesta.org.uk/toolkit/theory-change/)
Rosaldo, R. 1980. Ilongot headhunting 1883–1974. A study in society and history.
Stanford, CA, USA: Stanford University Press cited in Glover, D & Stone, G.D.; (2018)
Sanchez, A.; (1990) The Textile Industry in the Philippines and Thailand: A comparison. Journal of Philippine Development. No 30. Vol XVII, No 1. 1990. Accessed: https://pdfs.semanticscholar.org/ebf7/ef18af2782a55949e7da6d727b37ff5a77d8.pdf
Tolentino, JR. D.; (2018) Feasts of Merit: wealth, status and feasting in Luzon Cordillera. Museo Kordilyera, University of Philippines, Baguio City.