Role of Craft & Technology in Interior-Architecture Prof. Ar. Smriti Saraswat Department of Architecture & Planning Indian Institute of Technology, Roorkee

Lecture – 36 Interventions: Process Based

[FL] Hello everyone. Welcome back to the NPTEL course: Role of Craft and Technology in Interior-Architecture. We will be discussing module number 36 today and we will talk about Interventions and we will focus on the Process Based Interventions. So, when we say interventions, we would be referring to specifically the craft and we will try to understand what all are the possible kinds of interventions that could be looked at when we talk about the craft sector. And somewhere, we will also see the examples where we will try to understand different scenarios and specifically you know craft design collaborations.

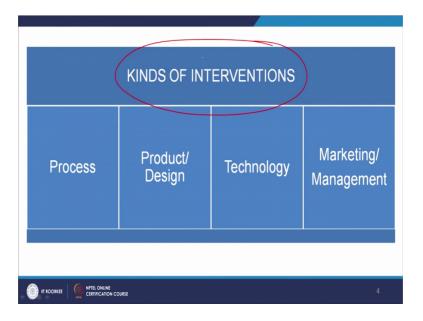
And how craft could be seen not generating just some utilitarian products, but also how we see the application in different domains and especially interior architectures. Since we are talking about it with the help of certain relevant interventions which are achieved through you know appropriate collaborations and a proper process which is employed. So, we will be discussing that you know throughout this next 4-5 modules and we will see what are the different approaches for interventions and how different individuals in organizations have been working to achieve these interventions.

(Refer Slide Time: 01:55)



So, today we will talk about the process based interventions and we will see some examples. So, like I said, let us try to first begin by understanding what are the different kinds of interventions, which are possible and which have a potential when we talk about the craft sector.

(Refer Slide Time: 02:11)



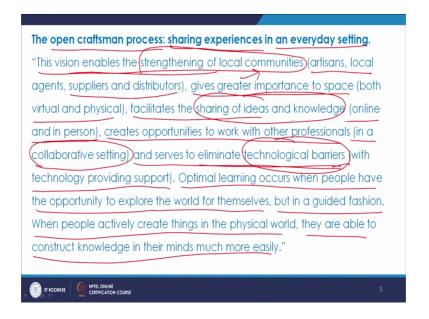
So, there could be a huge list and there could be different ways of intervening, but just broadly classifying I have tried to put four kinds of interventions that we would be looking at. So, process based product or design based technology inventions and the

marketing and management interventions. Now of course, we did some research already in the previous modules where we were trying to understand the gaps in the craft sector the problems faced by the craft persons and you know different policy related issues.

And that is where we identified that these are the kinds of interventions which are actually required in the sector. So, based on all that background research and the discussions that we did and the statistics which highlight, you know that the certain interventions are required these four have been highlighted here and we will try to understand them through each module.

So, when we are talking about the process based interventions it is very important to understand that for the contemporary craft sector what are the different approaches and what are the different processes that could be employed which would significantly have an impact on the already existing sector and it will result in value addition new market creation; And most importantly, creating the livelihood for the craft persons in creating a good quality of life for them.

(Refer Slide Time: 03:57)



So, one process is open craftsman process which encourages sharing of experiences in a everyday setting. So, this vision enables the strengthening of local communities. So, again the focuses communities here and the prime objective is to strengthen the already existing communities and the work that they have been doing.

So, the artisan's local agents suppliers and distributors all of the stakeholders were a part of an already existing community. So, strengthening this community gives greater importance to space which is both virtual and physical facilitates the sharing of ideas and knowledge. So, the most important thing is sharing of ideas and knowledge and that is also the focus which we saw in the road map developed by the national innovation council of India where there is a lot of focus on creating the exchange of a ideas and sharing knowledge through this course and giving appropriate platforms for such kind of a exchanges. So, that is very important.

Now, it could be online and in person the sharing of ideas and knowledge create opportunities to work with other professionals. So, networking and convergence of different people in a collaborative settings so, collaboration is another important word that we have been trying to discuss and serves to eliminate technological barriers.

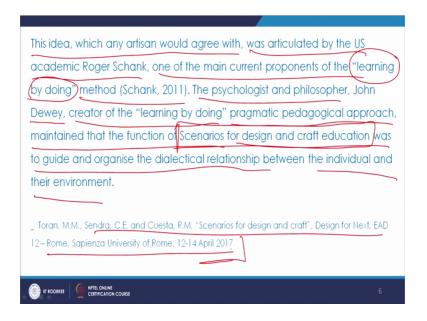
So, the most important part is that the technological barriers they get taken care off also the most important thing here is I do not remember which module exactly, but we discussed it once that the craft person and the communities they should be able to take care of the technical knowhow and their own.

Even if they give them some technological advancements, it should not be like that that they have to depend on a certain technicians to come over there. In case of problems or in case of certain you know for part that goes with the machinery, it has to be there empowerment the technical knowhow owned by them. So, that they take care of their problems. So, eliminating the technological barriers with technology providing support so, that support is important optimal learning occurs when people have the opportunity to explode the world for themselves, but in a guided fashion.

So, that is what this approach other process emphasize on when people actively create things in the physical world they are able to construct knowledge in their minds much more easily. So, this approach talks about creating collaboration and sharing of ideas and knowledge. And again we saw certain examples already where this craft design collaboration and exchange of ideas and people coming together is a given lot of importance. In the next module also, we will see lot of examples where you know this collaboration has been tapped and this craft design process has been employed and it has produced great results.

So, we will see some examples like Kala Raksha Vidyalaya and some more design studios working with this approach and generating sustainable livelihoods and dignity and respect for the craft persons and creating the prototypes and the products which the market needs. So, the ecosystem is developed and an equilibrium is maintained you know between what is the origin of the product to the entire you know delivery and the end users who gets benefit after benefited out of it. So, that is one approach and continuing with it.

(Refer Slide Time: 07:53)



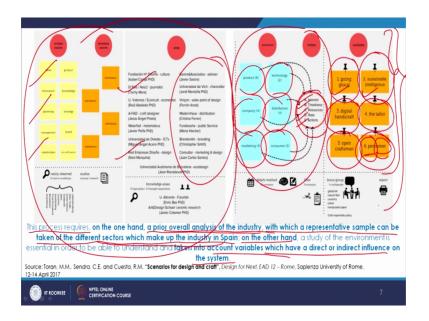
This idea with any artisan would agree with was articulated by the U.S academic Roger Schank, one of the main current proponents of learning by doing method. So, this learning by doing that to share an environment is something which is really encourage the psychologist and philosopher John Dewey, creator of the learning by doing pragmatic pedagogical approach maintained that the function of scenarios for design and craft education was to guide and organize the dialectical relationship between the individual and their environment.

So, what is important here is that, there is a mention of certain scenarios for design and craft and there is a very interesting paper where these scenarios have been mentioned and explode. So, they have explode some 22 scenarios. I am not going into those details and the references here you could see that. So, identifying the scenarios for craft and designed to come together to collaborate starting from mapping the already existing

system to coming up with a set of variables and creating an entirely new system which produces interesting and experimental results is something that you know they have explode in that paper.

And it helps in guiding this dialectical relationship between the individual and the environment and how this craft design process and the coming together of people and then exploring different scenarios with respect to the environment where one is situated, how it produces some amazing results those are the findings of that paper. So, just going by you know one diagram in the process which that paper explains.

(Refer Slide Time: 09:46)



So, I am continuing it from the previous slide. This process requires on one hand which we see here a prior overall analysis of the industry and they are talking about the industry in Spain with which a representative sample can be taken of the different sectors which makeup that industry in Spain. So, here on one hand there is this overall analysis of the industry different sectors and different set of information sample sizes and the kinds of areas which are covered.

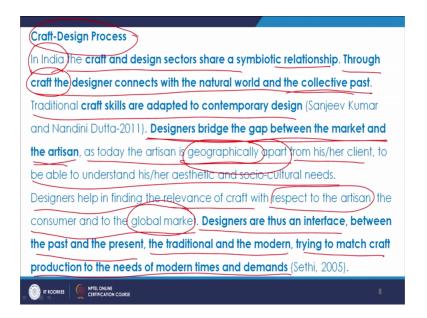
On the other hand, it takes into account variables. So, here we see different variables over here and it talks about the product technology company distribution marketing consumer. All the important aspects when we think about the value chain and the craft sector plus the set of certain variables which have a direct or indirect influence on the

system. So, here there are lot of concluding remarks also that they have given. So, going local could be like one approach.

Sustainable intelligence digital handicraft retailer method the open craftsman that we just discussed few slides ago and then the consumer where there is consumer and then there is the purchasing capacity. So, they are different variables and then they have worked on the permutations and combinations. So, precisely like I told 22 scenarios which is beyond the capacity you know to be discussed in this module, but one could have a look at it. So, that is how they are trying to you know analyze existing craft system and then coming out the certain variables and creating this another you know way of analyzing.

How these variables influence the system and what are the different parameters that could be taken into account. So, it is a very interesting paper and it describes the entire process it also talks about these different approaches and strategies and what are their benefits or you know what beneficial points out of these approaches. So, if you see the entire paper, it would explain the process involved in specifically the craft design process. So, continuing our discussions on the craft design process because, that is the main focus when we are talking about the process based interventions.

(Refer Slide Time: 12:34)



So, if we talks specifically in the context of India. In India, the craft and design sectors share a symbiotic relationship through craft the designer connects with the natural world and the collective past. So, it is through craft that the designers today find their way to

connect to the natural world. To understand the natural surroundings, the material culture and the wisdom of several generations traditional craft skills are adapted to contemporary design designer's bridge the gap between the market and the artisan. So, according to this craft design process it is encouraged at the craft person and the designers they work together now of course, there are certain problems within it and we will see that in the next module and how certain organizations.

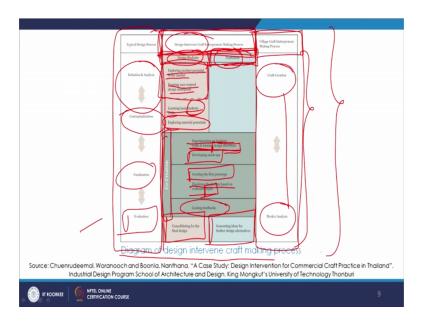
By modifying the model, you know they have tried to rectify these problems and the collaboration established in such a way that there is creative freedom at both ends and neither the craft person or the designer. They are you know sort of exploited or they are not given their due role on not given their due credits. So, there is certain way of doing things there are certain models where you keep the main creator as the primary person and then the other people just you know aid in their with the inputs and whatever help they could do.

So, where designers bridge the gap between the market and the artisan; as today, the artisan is geographically apart because, not all the artisans have the outreach not all of them know the contemporary market and the demands and probably it is not even relevant for lot of artisans. Because, they think that whatever they have doing traditionally for making utilitarian products is something which is important and then they do not want to dilute it. So, there are different approaches to this process also it requires a lot of rapport building, working together making the craft person feel very comfortable and just letting be letting them be there in their setting close to the natural surroundings.

So, the leaves the designer could do this is give them inputs in a way which does not take away the creative freedom of the crafts person. So, because the artisan is geographically apart from his or her client to be able to understand his or her aesthetic and socio cultural needs and also what market requires designers help in finding the relevance of craft with respect to the artesian the consumer and to the global market. So, where again the market is an important factor designers are thus an interface between the past and the present the traditional and the modern trying to match craft production to the needs of modern times and demands.

So, this is one process where the designer access the interface and there is this collaborative craft design process that is employed. So, again not going into you know too many of details. I, when I said there are flipsides to this process also and through some examples we are going to address that so, we see this diagram the diagram of design intervene craft making process.

(Refer Slide Time: 15:59)



Here we see a typical design process here we see a village craft entrepreneur making process and this is what we see as the design intervene craft entrepreneur making process. So, where design intervenes the craft so, this is the typical design process which starts from you know, analysis and initiation and then there is this concept building and then finalization and evaluation. And here, when the village craft entrepreneur create something and then takes the creation to the market again it is a process of craft creation all the way to market analysis into a simple steps.

But, when we see here there are a gamut of activities involved, there is a step by step process. So, there are some design students and professionals as one set of stakeholders and then we see certain craft persons I would like to replace the word crafts man craft person. So, they both are men and women involved. So, here some young students you know who are exploratory and who have very innovative thinking the explode product potential in the market forming user centered design stand point.

And for example, if basketry is taken as a craft form learning from basic basketry crafts and exploring material potentials like we saw some examples where the different materials have been explored for a craft form which otherwise use another plate of materials and colour. So, that is another form of exploration and then there are craft persons who demonstrate and from whom the students and the professionals the other stakeholders learn and then we have this process of co creation where they all come together.

So, there is experimenting on basketry because, we are talking about basketry here experimenting on basketry crafts and forming design directions. So, heading in a certain direction creating certain design brief and then developing the mock ups to understand you know what would be the possible outcomes. It is always good to have certain models and mock ups and then creating the first prototype after that finalizing the designs based on the craft persons input.

So, it is very important that these design professionals is students who come up with these innovative ideas or you know it is adopt this interesting process where there is value addition to be existing product or there is a completely new product that is envisaged is very important; that craft person is at the center and there is a regular flow of inputs from him or her and the craft person should be a part of this process. And it should not be made to feel that he or she is not a part of it or who could not contribute in ideation and design thinking.

So, those inputs are very important then gaining the feedbacks consolidating the final design and generating ideas for further design alternatives. This is an interesting process where design intervene crafts where different people come together. This ideation there is co-creation, there is also evaluation whether it works or it fails and things like that.

(Refer Slide Time: 19:28)



So, continuing further our discussion on craft design process. It is a process that involves designing new products redesigning existing products with changes in shape, size, colour, surface manipulation, material alteration, function and utility, exploring new markets and reviving lapsed markets.

So, creating new market is one dimension and reviving lapsed market is a very challenging, but another option because, sometimes other than creating a completely new market. If one understands what is going wrong in an existing market and you know there is value addition and steps taken towards incremental innovation it is going to be very useful to understand how to revive those lapses market.

Applying traditional skills to meet new opportunities and challenges and the introduction of new materials; so, that is what we were talking about in the previous slide also. So, there is a plateau of new materials. And there is a huge potential lot of these materials offer and they need to be tapped and lot of them need to be explored and new prototypes could be generated and worked out based on the original methods and you know the craft skills.

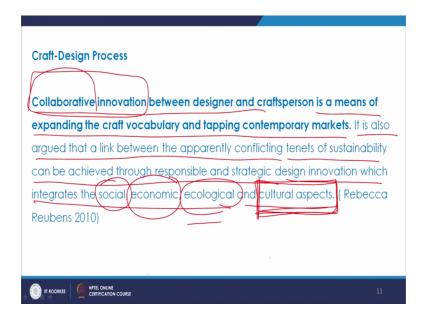
New processes, because we are talking about the process interventions and craft design process is also a new process which could be further refined and modified. And they could be different models one could work you know there could be different frameworks

of interventions. So, new processes developing them is another way of contributing you know towards the craft sector.

New tools and technologies of course, because there are a lot of craft persons in communities who work with the you know very old hand tools which at some point required upgradation. So, that the production could be improved and they are you know standards of living could be improved. They could be more sustainable ways of generating income for them if the tools and machinery and technology is upgraded.

It is seen as an interface between tradition and modernity. So, we were talking about continuity and revival. In the previous module and again. You know if we see this craft design process as an interface between the tradition and modernity. So, we are talking about the continuity revival contemporary expressions we are talking about the symphony of tradition and modernity that matches craft production to the needs of modern living. So, that is what craft design process emphasizes upon.

(Refer Slide Time: 22:34)

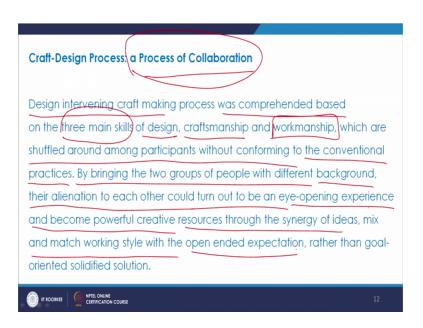


Further talking about collaborations, when we talk about the craft design process collaborative innovation between designer and crafts persons is a means of expanding the craft vocabulary and tapping contemporary markets. So, it has to be a collaborative innovation it has to have the inputs from both these stakeholders. And it is more like a sharing of ideas and exchange of knowledge rather than one dictating the other what to do and what not to do. It is also argue that a link between the apparently conflicting

tenets of sustainability can be achieved through responsible and strategic design innovation which integrates the social economic logical find cultural aspects.

And we have always been talking about this that when we talk about the innovation in the craft sector. It has to take care of the social economic ecological and most importantly the cultural aspects. Especially, when we talk about India, it has been seen as a cultural resources and craft is very significant also from the point of you know creating an identity for our nation. So, cultural aspects are very important and they need to be taken into consideration before making any policy, before thinking about any intervention before talking about any you know process of product or technology anything so, it is very important.

(Refer Slide Time: 24:02)



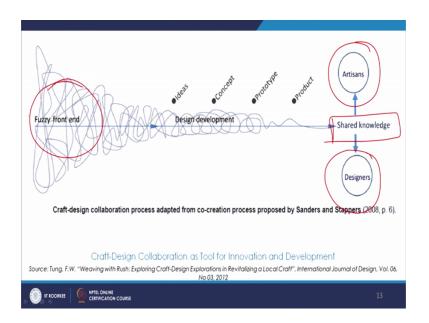
Again seeing the craft design process as a process of collaboration design intervening craft making process was comprehend based on the three main skills of design, craftsmanship and workman ship which are shuffled around among participants without confirming to the conventional practices.

So, this is the process of collaboration which has been mentioned in one of the researchers by bringing the two groups of people with different backgrounds their alienation to each other could turn out to be an eye opening experience. So, when two people from different backgrounds worked together, they have a completely different set

of ideas their approaches may be completely different. There are ways of doing would be a different also envisaging the possible output would be different.

So, bringing these people together on board and exchanging and sharing could be a creative process which generate some interesting ideas and become powerful creative resources to the synergy of ideas mix and match working style with the open ended expectation. So, there is no targeted output from a certain preconceived idea of what is to be produced rather than goal oriented solidified solution. So, the expectation was open ended experimental exploratory and creative and it is not something that is very goal oriented and preconceived already.

(Refer Slide Time: 25:43)

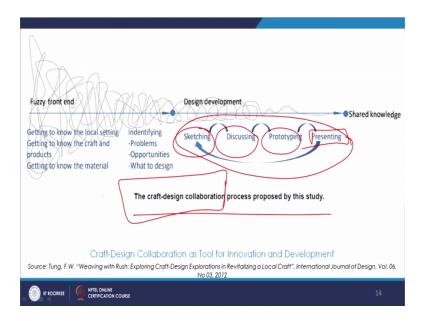


So, this we already in few previous modules, but because it is very irrelevant when we are talking about the craft design process, therefore, I am putting it again. So, that is how we talked about the collaboration between the artisans designers this craft design process and this shared knowledge that is generated when both of them come together.

So, you know in the beginning there this fuzzy idea of some of you know creation of some output and then on the way there are set of ideas that come into picture. There is a concept development prototype and final product and through this shared knowledge and through this design development from here to here a certain output is achieved. And it is the result of this collaborative craft design process and this is again a co creation process.

And it is very collaborative in nature and it is quite encouraged between different stakeholders.

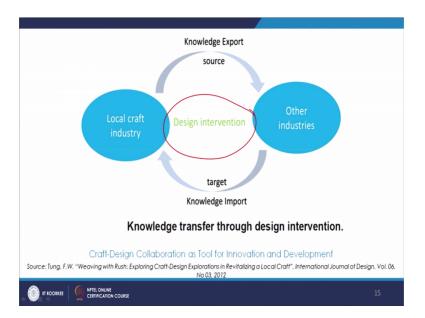
(Refer Slide Time: 26:47)



Again, this we had seen already in one of the studies where this craft design collaboration was discussed and certain layers were added to the process that we saw in the previous slide. So, while there is this shared knowledge and this design development happening where different tools which are employed and you know there is sketching these discussion between the different stakeholders prototyping.

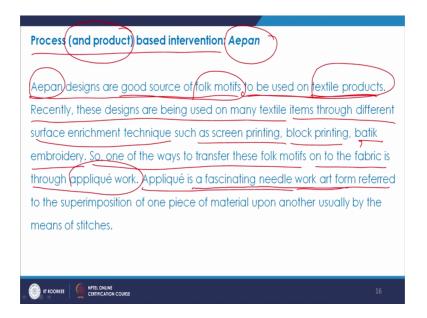
And then finally, presenting and disseminating evaluating it re doing it or improvising it and all these things that happens throughout this process.

(Refer Slide Time: 27:24)



We also discussed about this intervention part where you know there is the slogans of industry and there are other industries and there is again a knowledge transfer and there is a certain kind of collaboration that is established. And then, it is greatly affects the results and there is co-creation and there are different kinds of new interesting results out of this process.

(Refer Slide Time: 27:47)



Seeing some examples, now when we talk about the process based intervention and specifically talking about Aepan.

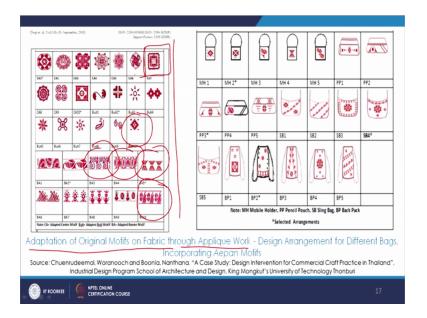
So, here, the process that we are talking about it also results in a product intervention product based intervention. So, aepan we discussed aepan during our previous models that modules that it is the path from a form from Uttarakhand. And these are you know ceremonial paintings which are done on the floors and walls. So, aepan designs are good source of folk motifs. We also saw some motives earlier to be used on textile products.

So, this is a sort of intervention and the approach which is been suggested by one of the researchers where you know these folk motifs are integrated on textile products recently these designs are being used on many textile items through different surface enrichment techniques. So, there is also the application of different techniques such as screen printing block printing there is batik embroidery.

So, through these techniques the original folk motifs of aepan, they are applied on the textile products. So, one of the ways to transfer these folk motifs onto the fabric is through appliqué work. Now, many of you might already be knowing aepan is a fascinating needlework are if this we are going to see in the next slide in any case.

So, it is a fascinating needlework art form referred to the superimposition of one piece of material upon another usually by the means of stitches. So, that is a technique which is used on a textile. And then, how one tries to apply the motifs you know the folk motifs of aepan in the textural products through these technique of appliqué work is one craft design process employed by you know few researchers and they have come up with some nice design solutions that we are going to see.

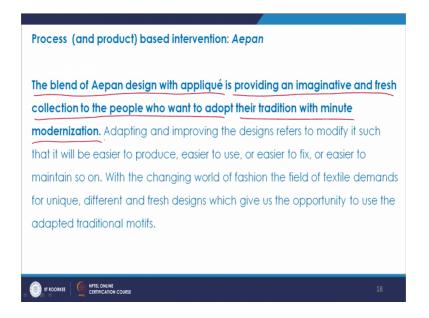
(Refer Slide Time: 30:01)



So, like we were discussing in the previous slide if you look over here. So, adaptation of original motifs on fabric through appliqué work this is what we see here.

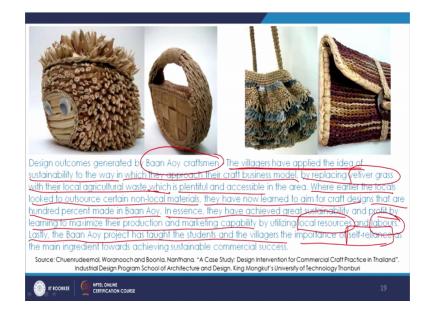
So, the original motif from aepan they are adapted and applied on the fabric through this technique of appliqué which is a kind of stitching the kind of needle work. And here on the right hand, we see design arrangement for different bags incorporating aepan motifs. So, the textile designers working with aepan artists and trying to come up with certain new prototypes adopting this craft design process. This is one example and this is already a research done by few people and the resource I have mentioned over here. So, this is one way of looking at the craft design collaborative process.

(Refer Slide Time: 31:00)



Then again continuing with the example of aepan the blend of aepan design with appliqué is providing an imaginative and fresh collection to the people who want to adopt their tradition with minute modernization. So, again here, to see these possibilities we have one art or craft form when it is combined with the other and the skills and the craft persons of these two different craft forms the come together collaborate and come up with certain processes and ideas which generate some interesting prototypes that is one way of looking at interventions.

(Refer Slide Time: 31:37)



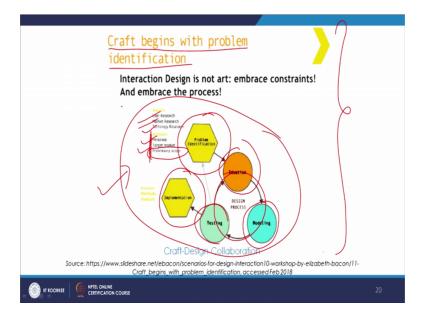
This is another example this is from Thailand and there is this community of crafts persons in bio. So, here there is a very interesting aspect of sustainability you know attached with this example the villagers have applied the idea of sustainability to the way in which they approach their craft business model by replacing the Vetiver grass with their local agricultural waste.

So, earlier they were using this vetiver grass and now they are replaced it with their local agricultural waste which is in abundance and accessible in the region where they are situated; where earlier the locals looked to outsource certain non-local materials they have now learned to aim for craft designs that are hundred percent made in their own community in their own region in essence. They have achieved great sustainability and profits by learning to maximize their production and marketing capability by utilizing local resources and labors.

So, this is one of the way to look at the intervention and the craft design process lastly this project is taught the students in villages the importance of self-reliance that is very important rather than outsourcing the material. And to you know tools and other things self-reliance and then looking at the local resources how important it is as the main ingredient towards achieving sustainable commercial success.

So, this is a very interesting intervention craft design process based intervention which I found. So, I put it over here you could have a look at the details. So, now, since we are having a look at different craft design processes and you know process based interventions in the craft sector.

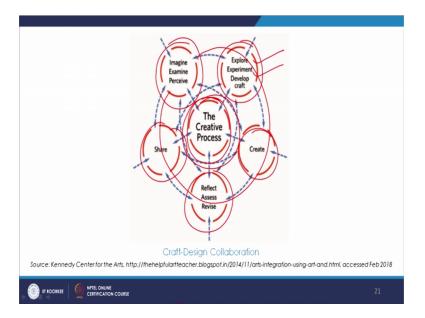
(Refer Slide Time: 33:30)



I could find this another diagram which has been put buy a researcher which talks about how craft begins with problem identification and you know in this chart where this process is explained how problem identification is put at the centre. And then you know it is followed by ideation and then modeling and testing and then there is network between and finally, the implementation happens.

Also their constant inputs user research market research technology research and in terms of outputs their target markets their personas and then there is a preliminary scope of you know process. So, these kinds of diagrams and process chart also help understand the intern linkages between the different stakeholders and components and to understand these step by step process. So, that is how they are important.

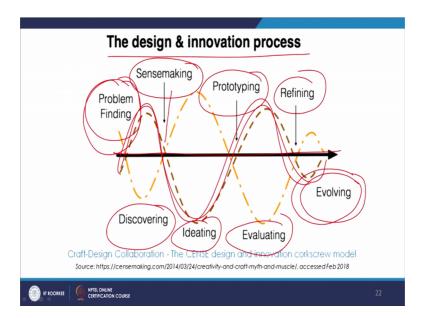
(Refer Slide Time: 34:23)



Another one, when if we have a look at this one. So, this creative process which is at the centre it is aided by different set of activities. So, like imagination examination perceiving and then all these activities are interconnected. So, then there is at the other node the set of activities involves exploration experimenting developing the crafts when creation and co creation since we are talking about co-creation reflecting assessing revising evaluating modifying sharing.

So, all of these are interconnected and the central creative process is aided by all the set of activities which are connected to each other in some of the other way and then they work together as a system.

(Refer Slide Time: 35:08)



When there is this another interesting one which says the design and innovation process and here while this is a linear path you know from problem finding to finally, evolving there is a constant graph and there are different set of parameters that come into picture and then there are different activities that happens. So, that is sense making this prototyping refining there is also discovering on the way ideating evaluating. So, from here to this final you know evolving there is this graph that one takes and then there is this back and forth process that always happens.

This is one very interesting example when we are talking about the craft design a collaborative processes and I should have also put the picture of Anil [FL] who is the craft person that is it, I think I just forgot it.

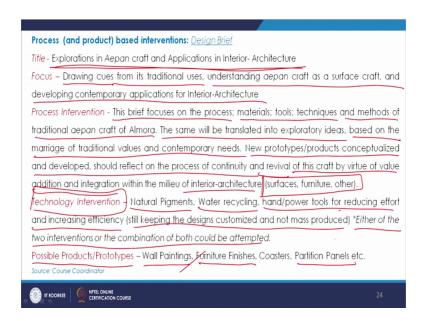
(Refer Slide Time: 36:01)



So, this is the modular storage system and it is a collaborative project done by the DICRC and craft canvas both in Ahmedabad. And this is the designer and there is the craft who has; obviously, talking about an admire a lot Anil [FL] and a this storage system which is a modular system and it has the exploration of this wood turning and arka craft about which we have been discussing already.

Again, is a very good example of the craft design collaborative process and how new markets are created and how new prototypes are generated. So, I would also like to discuss very interesting design brief which you know are developed at IIT Roorkee itself and they are the part of project Dharohar there again we are talking about the process and product based interventions.

(Refer Slide Time: 36:56)



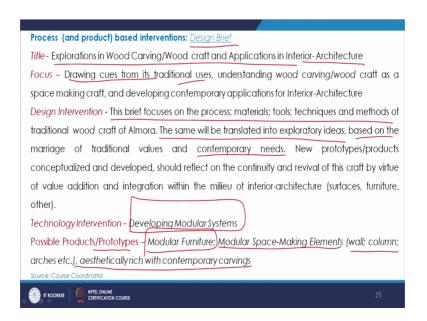
So, these are the design brief and design brief also help us understand you know what process to adopt. It is very important sometimes like we said identification of problem; so, identifying the problems then generating certain design brief and then adopting a process which could help us achieve what we and vision as part of this design brief. So, explorations in aepan craft and applications in interior architecture is something that we try to developed.

So, the focus was you know to draw ques from it is traditional uses understanding aepan craft as a surface craft and developing contemporary applications for interior architecture. So, this brief focuses on the process materials tools techniques and methods of traditional aepan craft of Almora. So, it is important first to understand what exists the same will be translated into exploratory ideas based on the marriage of traditional values and contemporary needs; in prototypes for products conceptualize and develop should reflect on the process of continuity and revival that is what we always talk about all this craft by virtue of value addition and integration within the value of interior architecture.

So, application and surfaces furniture etcetera technology intervention within this a craft design process could be to create natural pigments take care of water recycling you know use of hand of our tools for reducing effort and increasing efficiency still keeping a designs customize and not mass produced this is very important.

So, either of the two interventions are combination that could be worked upon this was when design pre which was developed and the possible applications of prototypes could be the wall paintings furniture finishes coasters partition panels etcetera. So, this is just the development of design brief which is very essential before a process is adopted to finally, come out with a prototype.

(Refer Slide Time: 39:02)



Similar way, a design brief was developed for the explorations in wood carving wood craft and applications in interior architecture again drawing the cues from the traditional uses and then creating a symphony with the model requirements. So, this brief focuses on the process materials tools techniques. Again, the very important you know all the important aspects when we talk about the craft the materials tools techniques, everything the same will be translated into exploratory ideas based on the new contemporary needs.

So, developing modular system is something that we were you know trying to look at and possible products of prototype could be modular furniture like what we see in the case of the modular storage system modular space making elements like wall column and then aesthetically rich with contemporary carvings. So, this is one in design brief which focuses on the wood craft.

So, we were discussing about the craft design collaborative process certain design brief certain examples and how they are look at as important tool you know for innovation and intervention in the craft sector. Especially exploring the crafts in the menu of space

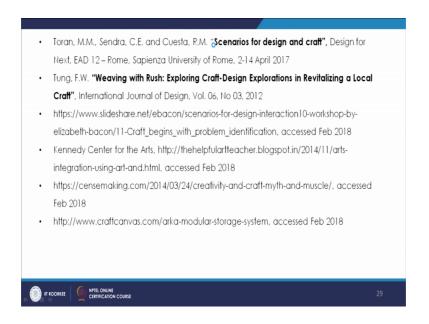
making and tapping the potential of building crafts and you will continue these discussions, we will see lot of product based interventions technology based interventions market based interventions. So, the next module we will focus on the product and design based interventions some references.

(Refer Slide Time: 40:41)

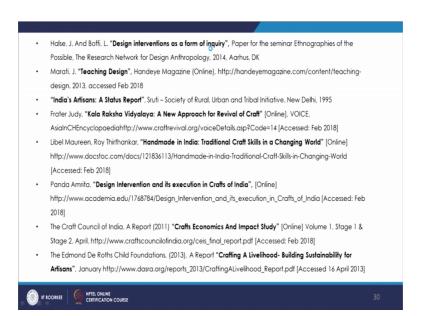


This is the specific case that we discussed from Thailand. So, that example is there any other resources and references you would find here.

(Refer Slide Time: 40:52)



(Refer Slide Time: 40:54)



(Refer Slide Time: 40:56)

- "MMCF Review", Maharana of Mewar Charitable Foundation, Udaipur, 2011
- Saraswat, Smriti. "The Nuances of Thikri Kaam", Periodical of Institute of Indian Interior Designers (IIID) – INSITE, Jan 12, pp. 18-20
- Topsfield, Andrew. "City Palace Museum, Udaipur: Paintings of Mewar Court Life (Museums of India)", Grantha Corporation; Reprint edition, 1990
- Chaudhuri, Mamta. "The Technique of Glass Making in India (1400-1800 A.D.)", Indian Journal of History of Science, 18 (2), pp. 206-219, 1983
- Rautela, P., Joshi, G. C., Singh, Y., & Lang, D. "Timber-Reinforced Stone Masonry (Koti Banal Architecture) of Uttrakhand And Himanchal Pradesh, North India", EERI, IAEE, 2008
- Saraswat, S., & Mayuresh, G. "Koti Banal Architecture of Uttrakhand: Indigenious realities and community involvement", ICoRD, 2017 (pp. 165-177). Springer, Guwahati, 2017
- Desai, R., Desai, R., Jain, P., Mukherji, R. K., & Talpada, H., "Technical Guidelines & Information for Stone Constructions In Uttrakhand", Dmmc, Dehradun, 2011
- Icomos, "Charter On The Built Vernacular Heritage", Icomos, 1999
- Rautela, P., & Joshi, G. C., "Earthquake-Safe Koti Banal Architecture of Uttarakhand, India", Dehradoon, date not defined



- Patel, Kireet; Shah, Reena and Agarwal, Reenal. "Space Making Craft Vol. 1 Arayish: Wall Paintings of Shekhawati", School of Interior Design Research Cell, 2006
- Thakkar, Jay and Morrison Skye. "Space Making Craft Vol. 2 Matra: Ways of Measuring Vernacular Built forms of Himachal Pradesh", School of Interior Design Research Cell, 2008
- Thakkar, Jay. "Nagsh: The art of wood carving of traditional houses of Gujarat, focus on Ornamentation", School of Interior Design Research Cell, 2004
- Saraswat, S., & Mayuresh, G. "Koti Banal Architecture of Uttrakhand: Indigenious realities and community involvement", ICoRD, Springer, 2017 (pp. 165-177)
- Sinha, R., Brzev, S., & Kharel3, G. "Indigenous Earthquake-Resistant Technologies An Overview", Vancouver, 2004.
- Pandya, Y. "Concept of Space in Traditional Indian Architecture", Mapin Publishing Pvt. Ltd... Ahmedabad, 2005
- Pandya, Y. "Elements of Space Making", Mapin Publishing Pvt. Ltd.,, Ahmedabad, 2005
- Coles, J and House, N. "The Fundamentals of Interior-Architecture", Ava Publishing, 2007
- Hudson, J. "Interior-Architecture Now", Laurence King Publishers, 2007



(Refer Slide Time: 40:59)

•Alfoldy, Sandra (ed.). "Neocraft: Modernity and the Crafts", The Press of the Nova Scotia College of Art and Design, NSCAD University, 2007 •Sennett, Richard. "Craftsman", Penguin Books Ltd., England, 2008 •Risatti, Howard. "A Theory of Craft: Function and aesthetic Expression", The University of North Carolina Press, USA 2007

Patel, Kireet; Shah, Reena and Agarwal, Reenal. "Space Making Craft Vol. 1 Arayish: Wall Paintings of Shekhawati", School of Interior Design Research Cell, 2006

•Thakkar, Jay and Morrison Skye. "Space Making Craft Vol. 2 Matra: Ways of Measuring Vernacular Built forms of Himachal Pradesh". School of Interior Design Research Cell. 2008

•Thakkar, Jay. "Naqsh: The art of wood carving of traditional houses of Gujarat, focus on Ornamentation", School of Interior Design Research Cell, 2004

•Abott, H.Porter. "Cambridge Introduction to Narrative", Univ. Press, Cambridge, U.K., 2002

•Bruno, Giuliana. "Atlas of Emotion: journeys in Art, architecture and Film", London, New York, 2002 •Chhiber, Neelam. "Stone Craft of India", vol.1 & vol.2, Crafts Council of India, Chennai, with assistance from

Department of Culture and Development Commissioner, Handicrafts, Govt. of India, 2002 •Cobley, Paul. "Narrative", Routledge, London, 2001

•Collins, Peter. "Changing Ideals in Modern Architecture (1750-1950)", Faber and Faber, London, 1965, pp

•Jaitly, Jaya. "The Craft Traditions of India", Lustre Press Pvt.Ltd, New Delhi, 1990

•Lyndon, Donlyn and Moore, Charles W. "Chambers for a Memory Palace", the MIT Press, Cambridge, Massachusetts, London, England, 1994

•Mehrotra, Lakhan and Vajpayee, Raghvendra (ed.) "Communication Through The Ages – An Indian Perspective", Aryan Books International, new Delhi in association with Media Centre for Research and Development, Gurggon, 2009



(Refer Slide Time: 41:02)



(Refer Slide Time: 41:03)



Thank you.