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

Lecture – 33
Continuity and Revival:
Innovation and Development Perspective

Namastey! Hello everyone and welcome back to the NPTEL course - Role of Craft and Technology in Interior Architecture. Today we will discuss module number 33, and continuing our discussions on the continuity and revival of craft, we will be focusing today on the innovation and development perspective. So, this is the focus, like I said the innovation and development perspective and we will be discussing it through examples like:

(Refer Slide Time: 00:54)
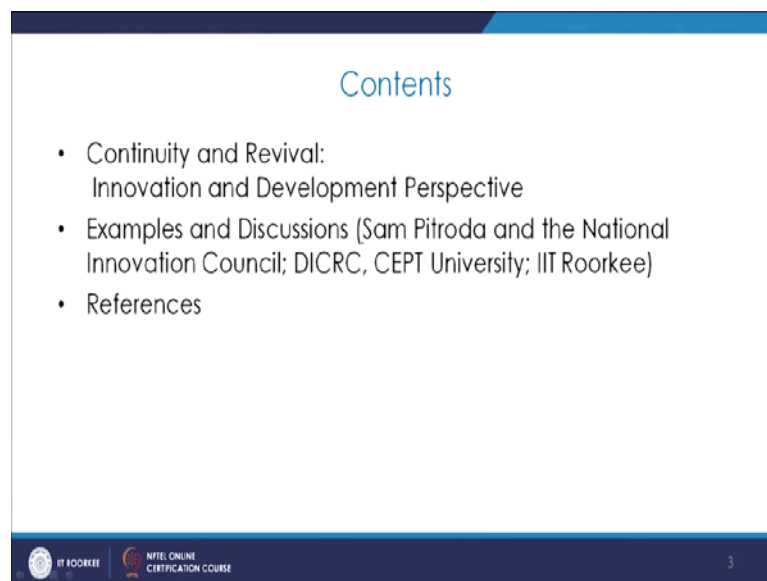
Mr. Sam Pitroda's work and the National Innovation Council; DICRC, CEPT University again and IIT Roorkee

And of course, we will also see through some references, towards the end.

So, since we are talking about the innovation and development and we briefly discussed, you know, what does innovation mean and what is the perspective on craft revival and then how it is connected to social change? But then again, looking a little bit into detail,

what innovation means? And how do we understand innovation in the context of craft, let us also try to see again some more discussions, definitions, or perspectives, which are given on the innovation.

(Refer Slide Time: 01:41)

So, "Innovation is defined as the commercialization of all new combinations based on the application of: new materials and components; the introduction of new processes; opening of new markets; and the introduction of new organizational forms".

So, in the subsequent modules where we will talk about interventions, we will be focusing on the materials, processes, marketing, and the management part and of course, the technology and innovation part. Also, there is this concept called the innovation Arena. And, it has four key aspects - technology, applications, market and organization combinations.

So again, all of them play a very important role when we talk about innovation and development, and specifically when it is the craft-design process in focus. And, there is also a discussion about the material culture; the different processes involved; and how the products reach the market. And, what is important here, is also the focus on the organization combinations.

Because, the new organizational forms, the network which is created and the kind of value chain that gets generated where different stakeholders are situated, and the way

they are linked and how the entire, you know, craft process is given so much significance not just at their workshop level or at the level of the individual creation, but how it is connected to different stakeholders, how it reaches the market and, how the entire organization works. So, all that is important and innovation comes into picture at all these different levels.

(Refer Slide Time: 03:39)
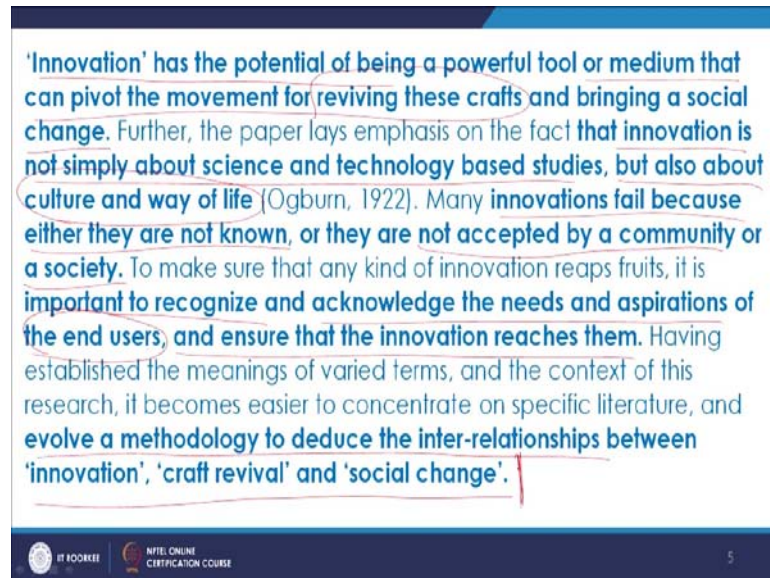
Again, innovation has the potential of being a powerful tool or medium that can pivot the movement for reviving these crafts and bringing a social change. Innovation is not simply about science and technology based studies, but also about culture and way of life. And throughout this course, we have been discussing about it. How the innovation and the contemporary interpretation of art-craft forms and so to say, the creative industries, because we are also talking about building crafts and architecture - so, when we talk about innovation in all these sectors they are rooted to a certain way of life and culture and because the communities are in picture, and the way they have been nurtured through different generations is also an important aspect to be understood. Innovations fail because either they are not known or not accepted by a community or a society.

So, lot of innovations fail, because they are developed, they are introduced, but they do not go well with the community, or they do not gel with the idea of their way of life or it makes them too dependent on the innovations. And sometimes they are not probably, not accessible - the innovations do not reach them. So, there are different reasons for that as

well. It is important to recognize and acknowledge the needs and aspirations of the end users, and it is very important.

So, we also discussed about this in one of the modules you know, where Jaya Jaitley Ji was talking about the same thing, and Judy Frater from Kalaraksha Vidhyalaya also talked about the same thing that the community aspirations, the end users' aspirations, they are very important, they need to be given certain creative freedom. And, that is how collaborations and innovations are going to, you know, give good results, and ensure that the innovation reaches them.

Evolve a methodology to deduce the inter-relationships between innovation; craft revival; and, social change. So, we discussed a bit about this as well. It is very important that you know all of them are seen in a cohesive manner with inter-relationships being established amongst them.

Now, when we talk about innovation and you know the craft revival, the two most important, the broad types of innovations that come into picture are - the incremental innovation and the radical innovation. And, I have put very briefly you know, what is a sort of the difference between them, and which is the most preferred one and of course, it needs another module to discuss them in detail.

(Refer Slide Time: 06:32)

Incremental Innovation – step by step slow process of introducing innovations by enhancing and improving tools and techniques significantly; creating a whole new range of products that is more acceptable by the markets; exploring different materials that are inexpensive and have a unique vocabulary; and evolving new processes without losing focus on the originality of concepts.
- Better means of Procuring Materials
- Market Surveys and exposure to women artisans
- Natural Dyes and Environment Impact Assessment
- Recycling Water and Re-using it – sustainable strategies
- Health and Safety of Women
- Value addition by creating a new range of products and prototypes

Radical Innovation - blows up the existing system or process and replaces it with something entirely new.

Research has found that policies that address the tail-end of the product innovation cycle and encourage demand for innovation are more likely to stimulate incremental innovation than to foster radical innovation (Nemet, 2009).

So, if we talk about incremental innovation, it largely focuses on the value addition and improvisation of an existing model, of an existing system and how to upgrade it through different means that we will see. And, it is a very slow step-by-step process and it is mostly accepted well by the community, because the changes are not very abrupt, they are slow and they evolve out of the needs of the community and an existing system, vis-a-vis the radical innovation, which completely blows up the existing system or process, that replaces it with something entirely new.

So, it is like you know, the existing system is blown up and an entirely new system is introduced. So, the changes could be very abrupt and they are usually not accepted by the community or a particular system, which works with certain processes. So, when we talk about the incremental innovation, they introduce innovations by enhancing and improving tools and techniques significantly; creating a whole new range of products that is more acceptable by the markets; exploring different materials that are inexpensive and have a unique vocabulary; and evolving new processes, without losing focus on the originality of the concepts and without blowing away the existing system.

So, better means of procuring material could be a small intervention; market surveys and exposure to women artisans; natural dyes and environmental impact assessment; recycling water, reusing it, coming up with sustainable strategies; developing the health and safety strategies for women, value addition by creating new range of products and prototypes.

So, these are the small interventions or innovations which are, you know, introduced and slowly an existing system is upgraded. So, research has found that policies that address the tail-end of the product innovation cycle, and encourage demand for innovation are more likely to stimulate incremental innovation, than to foster radical innovation. So, this is just briefly explaining the difference between the two and which is more acceptable form of innovation.

Now, since we are talking about innovation and development perspective and we have also been talking greatly about the creative-cultural industries and how linking the art-craft-interior architecture forms has generated the new avenues for development.

So again, linking the craft with creative-cultural industries and creating platforms where crafts are not just seen as the ritualistic practices or the making of the utilitarian products, but how they also generate the economy and also give the livelihood to the people; Global Presence for Craft and Acceptance - so, how are different art and craft forms given the global presence and how are they accepted worldwide on a more universal level.

So, creating something like GI TAGs and then you know competitive designs in the market, through which you know these designs get an international recognition. So, doing these kinds of small activities and then coming up with strategies like GI TAGs, this also is a part of the innovation and development perspective.

Technology up gradation of course, that we have talked, while we were discussing the incremental innovation part, but specifically you know focusing on the women, their training and capacity building. So, that will also give very good results and it is already happening, but of course, if it is scaled up and done on a more elaborate scale then it would give good results, because, there are lot of women who can contribute to the, you know, craft sector and the economy and many times they do not just get the chance to do

that. So, along with their household works if they indulge in these kinds of activities, they could also generate lot of good designs and economy.

(Refer Slide Time: 11:02)

"As consumers, we're more aware of materials now – not just their visual and sensual appeal, but also where they come from, why they matter. We're more curious about how things are made and who made them."

- (The Craft of Design- Joyce Lovelace-2013)

So, as consumers we are more aware of materials now, not just their visual and sensual appeal, but also where they come from, why they matter? We are more curious about how things are made and who made them." So, whenever we talk about the art, craft and interior-architecture, there is always, you know, innately, by default the involvement of discussion on material, the material culture.

And, since we are talking about innovation and development, there is this whole palette of new materials which is coming up. And, there are lot of craftspersons and artisans and architects who are experimenting with different kinds of materials, with traditional skills and trying to come up with certain kinds of prototypes, you know, which are innovative; new; different or which do some kind of a value addition to the existing product range and the designs.

(Refer Slide Time: 12:00)

So, when we talk about innovation, the word collaboration comes into picture. "Collaborative innovation between designer and craftsperson is a means of expanding the craft vocabulary and tapping contemporary markets." So, these collaborations are very important and the only important thing is that they have to give equal importance to the craft person and designer.

And in most of the cases actually, more importance to the craftspersons, because it is their skill, they know the materials since ages, and as designers probably you know, we could just help them, with some sort of an insight on the design part. Also, you know, it is important to have "responsible and strategic design innovation which integrates social, economic, ecological and cultural aspects".

So, all of these aspects when considered you know holistically, that is when the innovation actually nurtures and it actually benefits.

Studies conducted in Australia (Women's Health Australia, 2009), Sweden (Agahi & Parker, 2008; Häggblom-Kronlöf & Sonn, 2005; Silverstein & Parker, 2002) and North America (Hughes, Chang, Vander Bilt, & Ganguli, 2010; Menec, 2003) have estimated that between one quarter and over half of older women are involved in hobbies or handiwork like sewing, knitting or woodworking. **There has been growing international interest in the potential of art-making activities to improve health and well-being and address problems of social isolation amongst older people** (Greaves & Farbus, 2006; Hacking, Secker, Kent, Shenton, & Spandler, 2006; Stickley & Duncan, 2007).

_ Jeannine L.M. Liddle, Lynne Parkinson, David W. Sibbritt. "Purpose and pleasure in late life: Conceptualising older women's participation in art and craft activities", Journal of Aging Studies 27 (2013) 330–338, Elsevier

So, more studies and more perspectives:

So, there has been a growing international interest in the potential of art-making activities to improve health and well-being and address problems of social isolation amongst the older people.

So, also strategies like this are considered very innovative, where you know, the wealth the health and the well-being of the elderly or the women is taken care and then they are linked with certain kind of art-making or craft activity and processes, which could help them tackle this problem of social isolation and you know, growing age, and not involved or not feeling busy doing some work.

So, how you know, they are also brought in this value chain and they are important stakeholders, who could also contribute you know, in the making of the craft-design products, prototypes, while it also helps them overcome their problems and isolation.

(Refer Slide Time: 14:17)

So, now we will briefly see the India decade of innovations and Sam Pitroda and the National Innovation Council, and what is the framework that they have come up with. And, a little bit discussion on the craft-design collaborations, very visually and briefly.

(Refer Slide Time: 14:33)

So, government of India has declared 2010-2020 as the 'decade of innovation' and the focus is on the inclusive growth. So, there is a national strategy in place and there is a preparation of roadmap also. The Prime Minister has set up the National Innovation Council. And, this council would create a cross cutting system to provide policies,

recommendations and methodologies to boost innovation performance in the country with a focus on Indian Model of Innovation.

So, while we have been discussing all the literature that is borrowed from the different researches and scholars which are Non-Indian and yeah a bit of the Indian part as well we have been discussing, but then to come up with a certain model of innovation that could be said as the model of innovation for India, so, that was the intention behind setting up this council and coming up with the strategy, which proposes a roadmap for boosting innovations in India and also the aim behind declaring 2010 to 2020 as the decade of national innovation, the decade of innovation. Again, the intention behind that was also to, you know, think about the inclusive growth, and come up with innovation strategies for India.

(Refer Slide Time: 16:02)

So, the main objectives that the national innovation council follows are - formulate a roadmap for innovation for this decade of innovation that we were discussing about; to create a framework, which focuses on few very important aspects like Indian model of Innovation; inclusive growth; policy initiatives, which are required to spur innovation; then, developing and championing innovation attitudes and approaches; creating ecosystems, which foster the inclusive innovation, coming up with new strategies and alternatives for innovations and collaborations; then, means to scale and sustain innovations; encouraging governments to get, you know, involved and innovate; then,

encouraging the universities and R & D institutions to also innovate and come up with innovation models; innovations by SMEs; encouraging all important sectors of the economy to innovate; innovation in public service delivery; multidisciplinary and globally competitive approaches for innovations.
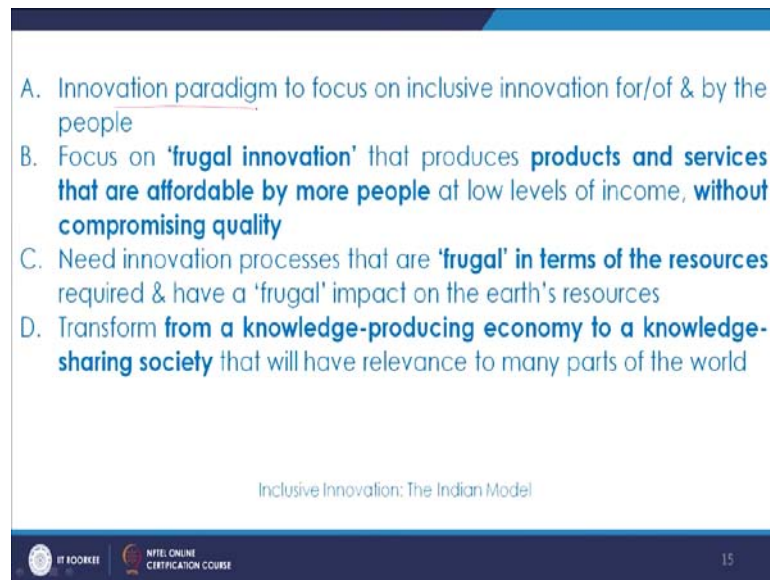
And, they also focus on setting up of state and sector innovation councils to help implement strategies for innovation in states and specific sectors. So, this council does all these important things and it discusses the importance of innovation in our country.

(Refer Slide Time: 17:40)

Now again, some of the important opportunities for innovation have been highlighted by the council and they can happen at different levels – product; be it services; processes; organizational level; governance; social sector; urban or rural. And, it could again involve, you know, different sectors, different organizations – public; national; international; private; individual; institution; whether big or small. And then, their hand-in-hand working creates lot of opportunities for innovation at all different levels and different scales.

(Refer Slide Time: 18:21)

The innovation paradigm to focus on inclusive innovation for/of and by the people - this is the Indian Model that is suggested by the council and it focuses on the inclusive innovation. The most important thing is the focus on frugal innovation, because there is already identification of lot of frugal innovation processes in our country. And so, the Indian Model of Innovation focuses on frugal innovation that produces products and services, which are affordable by more people without compromising quality. Also frugal in terms of the resources - so, innovation is needed, there frugal is also understood in terms of the resources. Transform from a knowledge-producing economy to a knowledge-sharing society. So, these are some important points, which are put forth while discussing the Indian model of innovation.

(Refer Slide Time: 19:24)
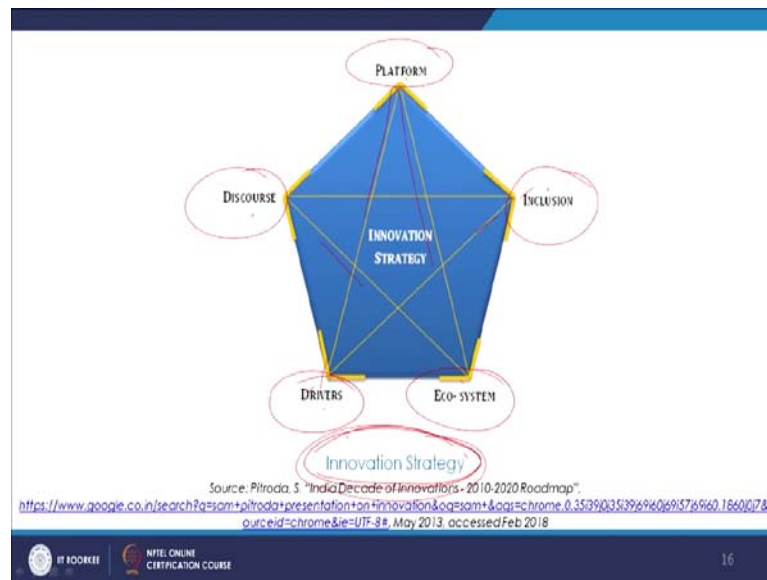
And then, there is also a discussion on innovation strategy, which has these five important nodes - so, creating platforms; encouraging healthy discourses and exchanges of ideas; identify the drivers which can be catalysts to provide this kind of a change and innovation; creating ecosystems; and, then fostering inclusion, and all of these are interconnected and that is what forms the innovation strategy for innovation in India, as defined by this council of innovation.

(Refer Slide Time: 20:02)

So, while the focus is on platform, it includes you know, products; processes; research and development; science, technology. Many more are included within this innovation strategy focusing on the important node of creating platforms, but the once that I have highlighted are more relevant when we are talking about continuity and revival of craft, focusing on the innovation and development part. And of course, like we were discussing, innovation just does not mean the science and technology, but it also has to impact the social change, it has to take a community and cluster in consideration and their way of life.

(Refer Slide Time: 20:41)

So, while the other important node is inclusion, it is aimed at the bottom of the pyramid. And, it focuses on awareness, access, affordability, availability, scalability, sustainability, innovations for and by the people.

(Refer Slide Time: 20:59)

Creating ecosystem - incentives and awards, innovations in MSMEs, policies and programmes, web and ICT tools - so, training the artisans and craft persons in this digital medium how they can be self-sufficient and they can also have online access and connect with the end user and different organizations.

So, focus on drivers - multi-disciplinarity, collaboration, locally relevant, globally connected and competitive. So, the drivers of change which catalyze innovation could be one of these and then, expand space for discourse - so, healthy discussions, debates, new ideas and the creation of India Innovation Portal.

(Refer Slide Time: 21:49)

So, if we see the institutional framework of the innovation councils, there is this National Innovation Council, then there are State Innovation Councils and then there are Sectoral Innovation Councils. And, then they take care of the innovation strategy and the innovation and development part in our country.

(Refer Slide Time: 22:05)
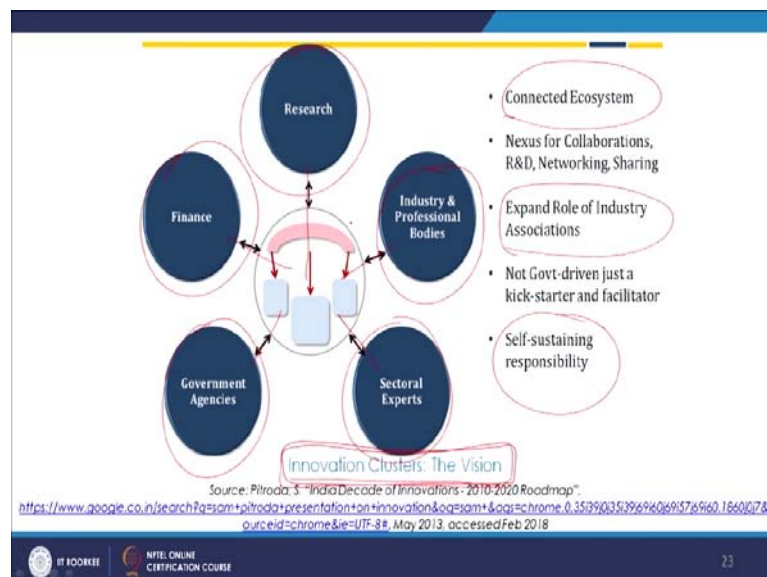
Then, there are also innovation clusters and there is a vision that is developed. So, connected ecosystem; then, self-sustaining responsibility; then there are expanding roles of industry associations. So, we see research here; finance; government agencies;

sectoral experts; and then, there is this interlinkage - interlinkage, which forms this innovation cluster.

(Refer Slide Time: 22:35)
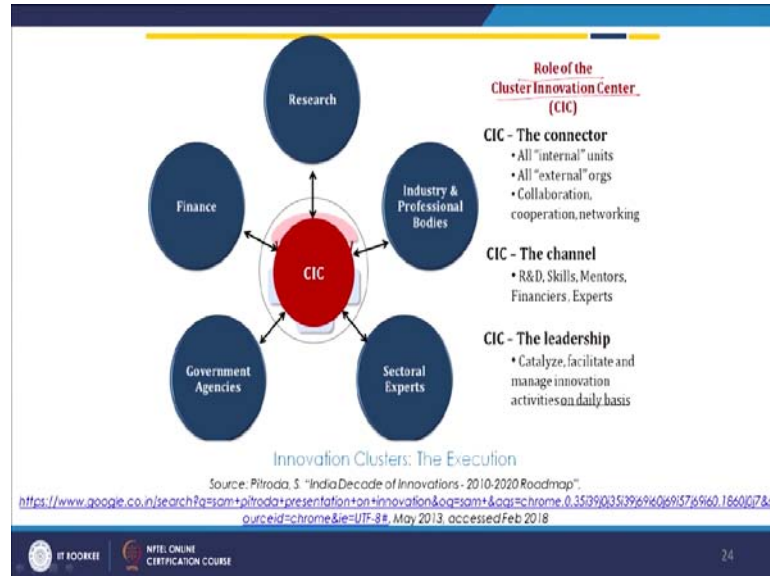
Again, the role of cluster innovation center, so there is also a cluster innovation center, and it also has these important roles and establishes connects between all of them. So, already there is lot of work which is done and some clusters have been identified and the innovation and technology part has been executed there, to some extent.

(Refer Slide Time: 22:48)
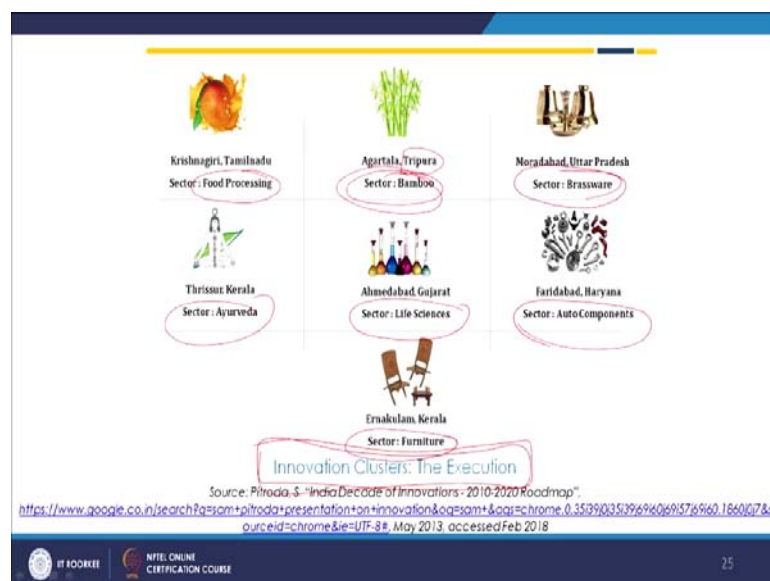
So, we are not discussing that in detail, but just to highlight. So, there is the food processing sector, which was considered; the bamboo sector - we have been talking about the Ringal craft of Uttarakhand which is a Dwarf Bamboo, so here it is Tripura; then, the brassware which is again a craft form; auto components; life sciences; Ayurveda; and again Kerala and the sector of furniture. So, all these different kinds of sectors have been identified, the clusters have been identified and the innovation strategies for them have been developed and they are executed in, you know, different phases.

(Refer Slide Time: 23:34)
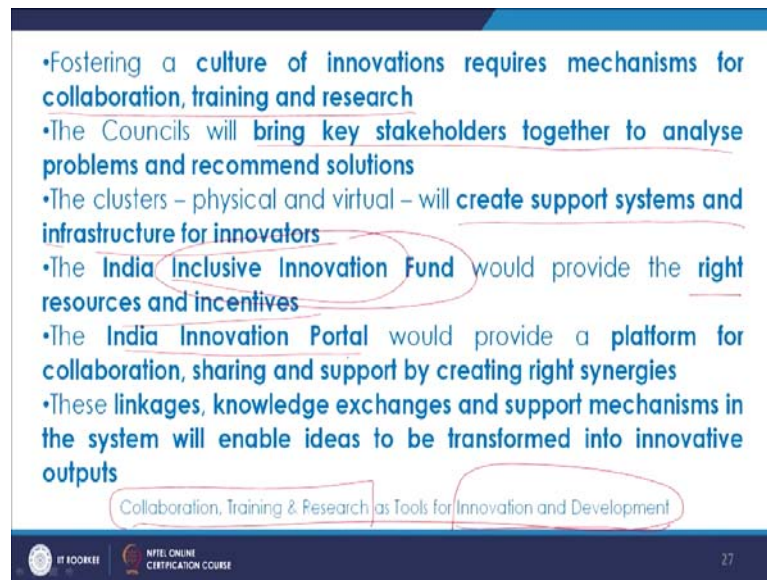
So, there is also a very important focus, also setting up a network of design innovation centres, as new models of design education co-located in institutes of national importance. That is also a step ahead while talking about innovation and development in the country. And, since it is about the design innovation centers and it is located within the institutes of national repute, and there is a discussion on the design process, craft very innately comes into picture, because, there are craft-design collaborations that have been tapped, there are possibilities of experimentation, and there are different kinds of boundaries which are blurring. So, craft, interior-architecture, design - all the approaches are being adopted, where there could be a symphony of these, and there could be innovation at the grass root levels.

(Refer Slide Time: 24:29)

So, continuing, you know, the innovation and development, and how collaboration, training and research could be seen as important tools for innovation and development. So again, that is very important that you know the collaboration, training and research part is fostered; and lot of key stakeholders, they are brought together and there are collaborations which are established; support systems and infrastructures are given to the innovators; inclusive innovation fund is also created that provides the right resources and incentives; and of course, there is this India Innovation Portal which creates lot of networks and linkages.

So, seeing collaboration as an important tool, while discussing the innovation and development strategies, it is, it is very important. And, again since we are talking about collaboration, this is something interesting that I found, which you know, discusses the craft-design collaboration as an important tool for innovation and development.

(Refer Slide Time: 25:21)
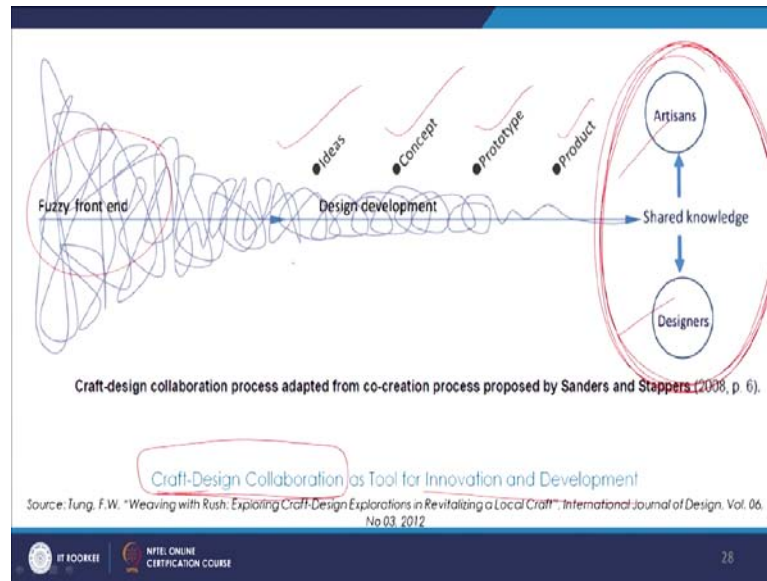
And here, we see some sort of design development and the shared knowledge between the artisans and the designers - so, starting from a very fuzzy end to come up with something tangible, which is achieved by the collaboration and shared knowledge of both the stakeholders.

(Refer Slide Time: 25:42)
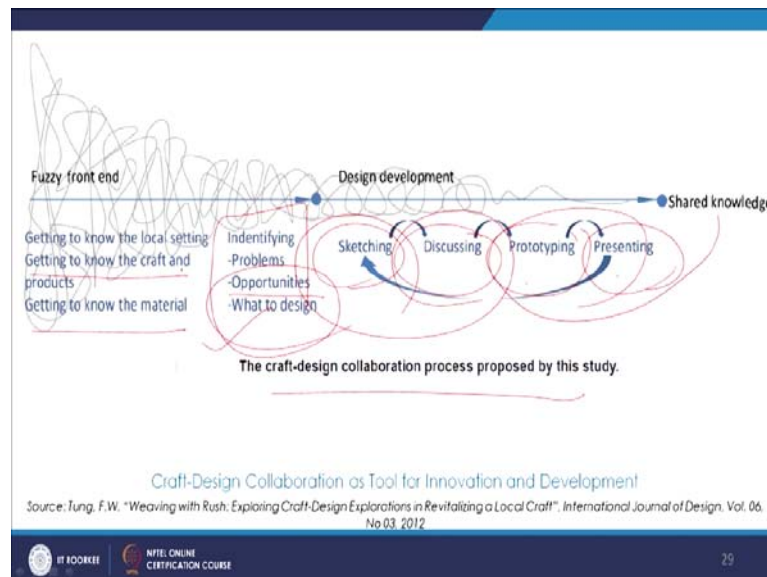
Further, the craft design collaboration, you know, it is also discussed in terms of different tools – sketching; discussing; prototyping; and, presenting. And, then how the shared knowledge through all these tools and mediums, you know comes into picture while

identifying the problems; also the opportunities what to design? How to design? And, getting to know which is the perfect material and what kind of products and processes are required?

(Refer Slide Time: 26:10)

So, mapping what is desirable in craft, and what is possible through design, that is an important approach. So, what all is already you know desirable when we talk about the craft and the craft community - what are their pre-existing techniques; their knowledge of aesthetics and material culture; and you know, their harmony with nature.

And then, what else design could provide, you know, so, some revival to the pre-existing techniques and then through design, the promotion of its local uniqueness, but giving a sort of a global approach.
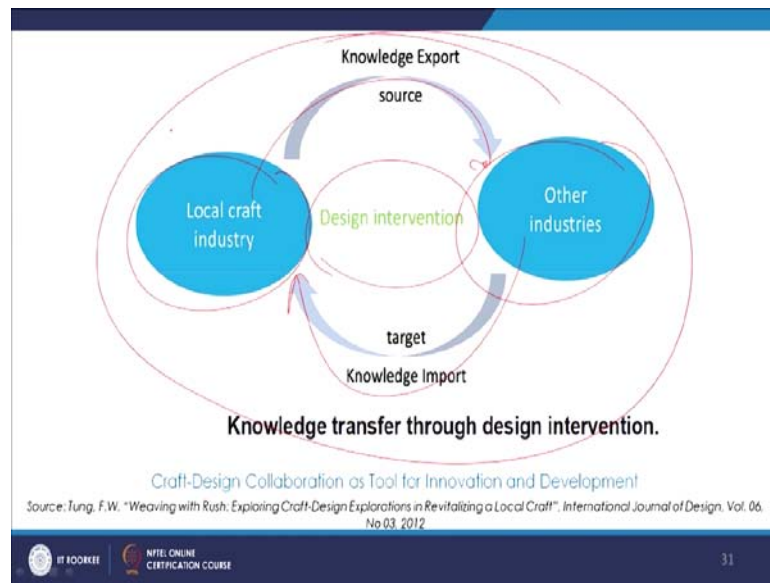
So here, design intervention part; the local craft industry; other industries and how there is a knowledge export here, and knowledge import from here to here and this shared collaboration results in interesting innovations.

We will see some of the works of the DICRC, CEPT University very briefly and very visually, how they have done some projects and focus on the innovation and development part.

(Refer Slide Time: 27:21)
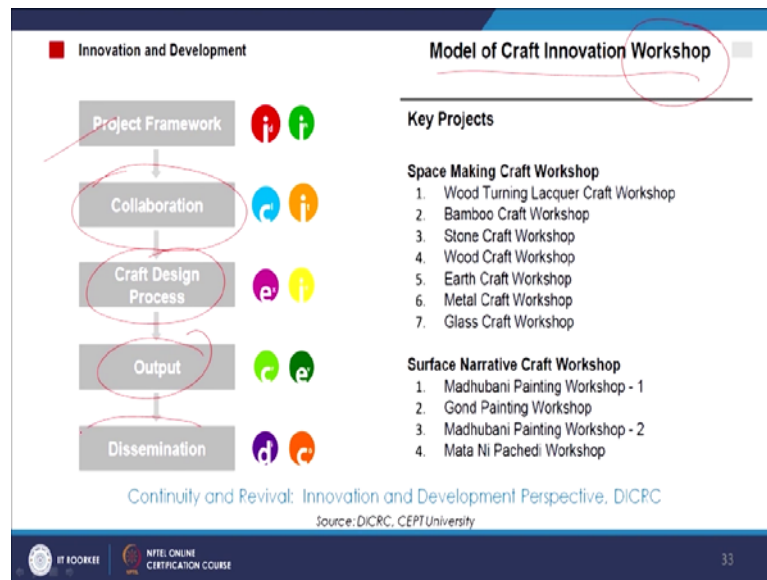
So again, they have this model of craft innovation and they usually conduct lot of workshops, at the end of which, there are some very innovative prototypes, which are documented and disseminated. So, they have this project framework, then they have the collaboration aspect, craft-design process, what is the output and then it is finally disseminated.

(Refer Slide Time: 27:33)
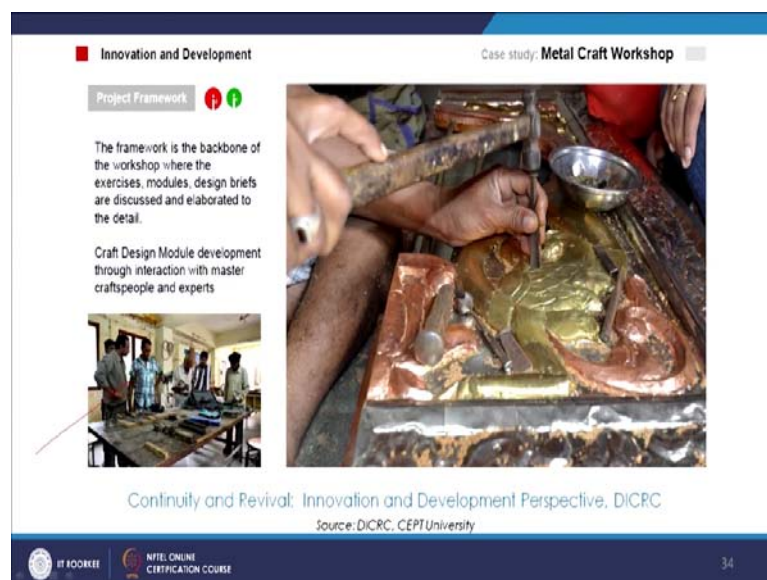
So, you know, focusing here on copper, what is the framework and what is the design brief.

(Refer Slide Time: 27:40)

Then what all are the possible collaborations, which are done, to work further.

(Refer Slide Time: 27:47)

Then, what is the process which is adopted, where different craftspersons and designers come together, different insights coming from different people who were exposed to different ideas and different methods.

(Refer Slide Time: 28:00)

Then, interactions amongst all of them, demonstration, learning through the demonstration, ideation and exploration, going ahead of what already exists, discuss, create the craft design groups - the artisan**s;** the craftspersons; the students; the professionals, and how do they ideate and come up with certain interesting briefs to develop interesting prototypes.

(Refer Slide Time: 28:08)

(Refer Slide Time: 28:21)

(Refer Slide Time: 28:25)

So again, experimentation, and of course, some acknowledgment and appreciation to the people who have been involved, just as a token of, you know, respect and appreciation.

(Refer Slide Time: 28:30)

Again, creation and experiment - so, some interesting prototypes that are generated which are not as part of the existing product range, and which the craftspersons and the artisans, designers, professional, students all of them, you know, contribute in that, in the creation of that output. And, it also helps to understand the material and the process and implements certain new ideas and come up with innovative prototypes.

(Refer Slide Time: 29:03)

Of course, the dissemination part - the exhibition and the, you know, publication and media.
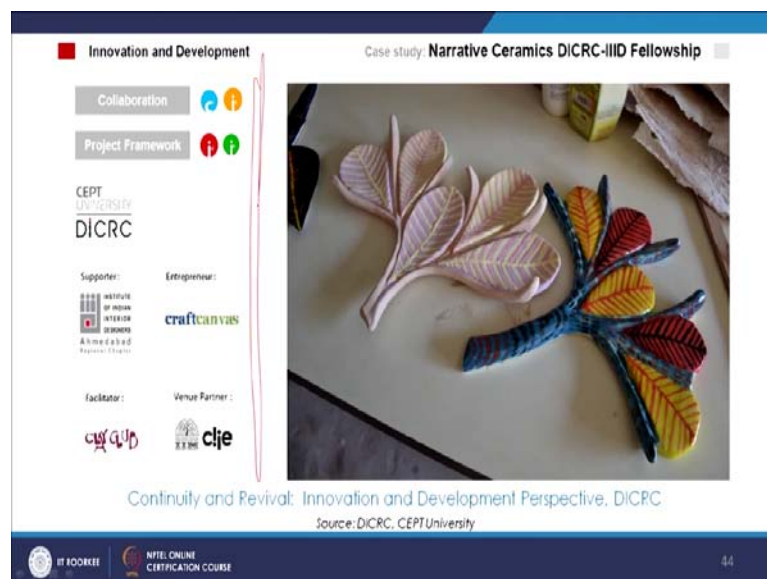
(Refer Slide Time: 29:08)
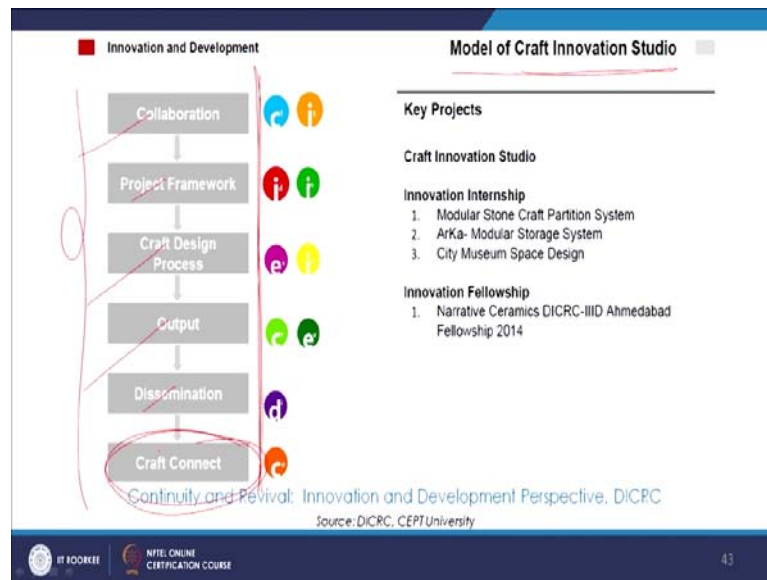
So again, for their innovation and development, you know, they also have this craft innovation studio and then again they follow a certain step by step process and a system.

So - collaboration; project framework; craft-design process; output; dissemination; and, eventually the craft connect, connecting different craftspersons and different stakeholders.

(Refer Slide Time: 29:32)

So, again we see here the kind of material or a project is identified, different collaborators are identified.

(Refer Slide Time: 29:41)

They come together, they establish some interesting craft-design processes, people working together, different stakeholders.

(Refer Slide Time: 29:47)

Certain kind of output is developed and then it is disseminated.

(Refer Slide Time: 29:49)

(Refer Slide Time: 29:52)

And then eventually, there is a connect, which is established, and this whole team has a sort of a network. There are also initiatives like you know, DICRC triple ID Fellowships. So, lots of people come together.
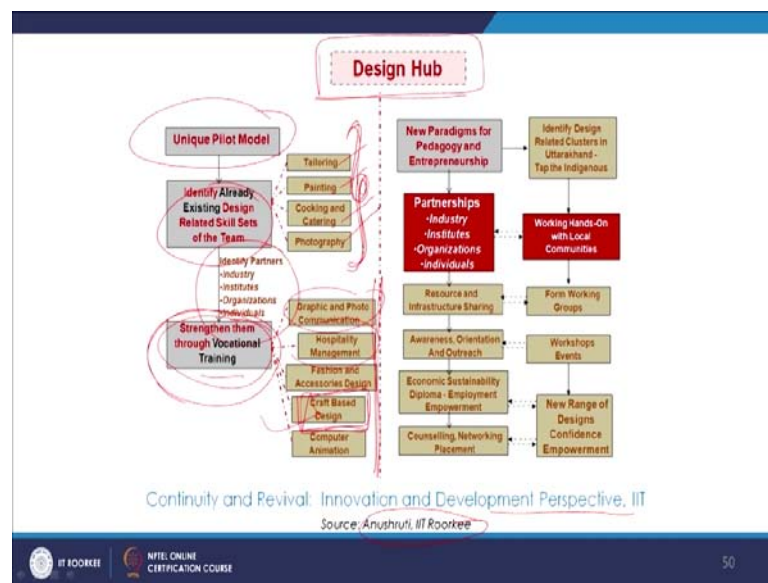
So, this was a proposal for Design Hub, which was being created for Anushruti which is the social initiative of IIT Roorkee. And, it was being worked upon and it was only in this stage of ideation, where this design hub was considered as a unique pilot model, which would identify the existing craft skills and design skills of the school Anushruti and the students which possess those schools, skills sorry.

And then, how you know, again identifying partners and collaborators like how DICRC does, a strong collaborative team is created, then they focus on strengthening the existing skills through vocational training. And the different kinds of disciplines were considered, not just already existing skill sets, but you know, graphic communication; hospitality management; and, here we see, the craft based design also in to focus.

So, how this, you know, model, where the existing skills are highlighted and then the collaborators coming in and strengthening the existing skills through vocational training, and then this adopting of craft-design process of, you know, craft-design process and varied stakeholders coming in together, and then generating something new, which is innovative, interesting and something different from what already existed.

And, you know, there were like two important sides to the design hub. So, one is this and the second one was developing a new paradigm for pe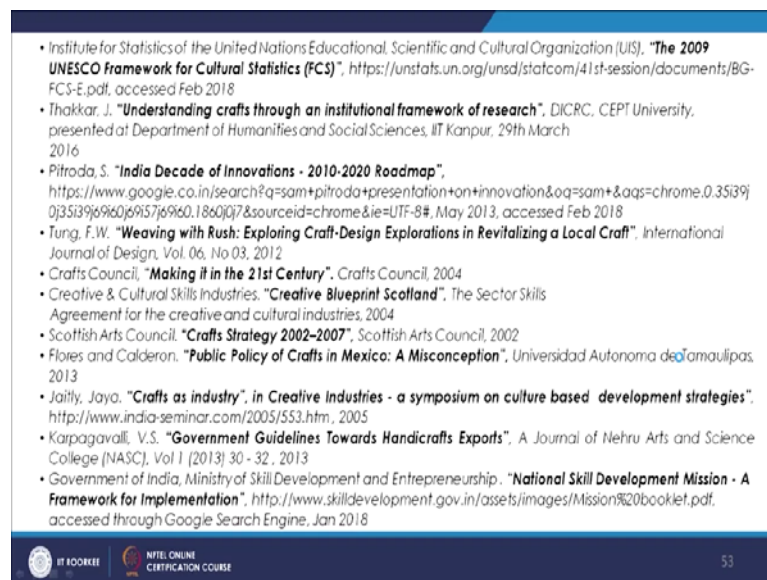dagogy and entrepreneurship in the school, where the children already possess lot of skills, like which have been mentioned already, then identifying the design related clusters in Uttarakhand and tapping the

indigenous potential. And then, how they come together, working hands-on with the local communities, establishing partnerships and you know industry coming in, the students going to the industry for internship, and again developing sort of collaboration and network.

And then come up with interesting designs and prototypes through, you know, resource sharing; by making different groups; creating workshops; being a part of it; and then you know by forming a network; and finally, coming up with new range of designs which gave confidence to all the children of Anushruti as well as empowerment to the artisans, craftspersons and the indigenous communities, which came forward to collaborate. So, this was a sort of a model for the design hub, which was only in the stage ideation. So, I thought it could be interesting to discuss that.

So, next module, we will again continue with our discussions on continuity and revival of craft, and we will be focusing on the resource building and dissemination perspective. Let us see some references.

(Refer Slide Time: 33:04)

- Institute for Statistics of the United Nations Educational, Scientific and Cultural Organization (UIS), **"The 2009 UNESCO Framework for Cultural Statistics (FCS)"**, https://unstats.un.org/unsd/statcom/41st-session/documents/BG-FCS-E.pdf, accessed Feb 2018
- Thakkar, J. **"Understanding crafts through an institutional framework of research"**, DICRC, CEPT University, presented at Department of Humanities and Social Sciences, IIT Kanpur, 29th March 2016
- Pitroda, S. **"India Decade of Innovations - 2010-2020 Roadmap"**, https://www.google.co.in/search?q=sam+pitroda+presentation+on+innovation&oq=sam+&aqs=chrome.0.35i39j0j35i39j69i60j69i57j69i60.1860j0j7&sourceid=chrome&ie=UTF-8#, May 2013, accessed Feb 2018
- Tung, F.W. **"Weaving with Rush: Exploring Craft-Design Explorations in Revitalizing a Local Craft"**, International Journal of Design, Vol. 06, No 03, 2012
- Crafts Council, **"Making it in the 21st Century"**, Crafts Council, 2004
- Creative & Cultural Skills Industries. **"Creative Blueprint Scotland"**, The Sector Skills Agreement for the creative and cultural industries, 2004
- Scottish Arts Council. **"Crafts Strategy 2002–2007"**, Scottish Arts Council, 2002
- Flores and Calderon. **"Public Policy of Crafts in Mexico: A Misconception"**, Universidad Autonoma de Tamaulipas, 2013
- Jaitly, Jaya. **"Crafts as industry"**, in Creative Industries - a symposium on culture based development strategies". http://www.india-seminar.com/2005/553.htm, 2005
- Karpagavalli, V.S. **"Government Guidelines Towards Handicrafts Exports"**, A Journal of Nehru Arts and Science College (NASC), Vol 1 (2013) 30 - 32 , 2013
- Government of India, Ministry of Skill Development and Entrepreneurship. **"National Skill Development Mission - A Framework for Implementation"**, http://www.skilldevelopment.gov.in/assets/images/Mission%20booklet.pdf, accessed through Google Search Engine, Jan 2018

IIT ROORKEE | NPTEL ONLINE CERTIFICATION COURSE

53

(Refer Slide Time: 33:06)

(Refer Slide Time: 33:09)

(Refer Slide Time: 33:11)

- Unni, J. *"Skill Gaps and Employability: Higher Education in India"*, Journal of Development Policy and Practice, SAGE, 2016, http://journals.sagepub.com/doi/full/10.1177/2455133315612310, accessed Jan 2018
- Mastani, M. **"The GST Regime is Damaging, Not Helping, India's Crafts Sector"**, The Wire, 25.09.2017, https://thewire.in/180849/the-gst-regime-is-damaging-not-helping-indias-crafts-sector/, accessed Jan 2018
- Saith, A. **"From Village Artisans to Industrial Clusters: Agendas and Policy Gaps in Indian Rural Industrialization"**, Journal of Agrarian Change, Vol. 1 No. 1, January 2001, pp. 81–123, http://onlinelibrary.wiley.com/doi/10.1111/1471-0366.00004/epdf?r3_referer=wol&tracking_action=preview_click&show_checkout=1&purchase_referrer=onlinelibrary.wiley.com&purchase_site_license=LICENSE_DENIED, accessed Jan 2018
- Rimmler, T (et. al.) **"How to support firm competitiveness in timber industries? Clusters as policy means in four european countries"**, 2011, https://www.researchgate.net/publication/292417833_How_to_support_firm_competitiveness_in_timber_industries_Clusters_as_policy_means_in_four_european_countries, accessed Jan 2018
- Mukhopadhyay, P., Srivastava, S. **"Ergonomic design issues in some craft sectors of Jaipur"**, 13,99-124,The Design Journal, Berg Publishers, UK, 2010, https://www.researchgate.net/publication/261031593_Mukhopadhyay_P_Srivastava_S2010_Ergonomic_design_issues_in_some_craft_sectors_of_Jaipur_1399-124The_Design_Journal_Berg_Publishers_UK, accessed Jan 2018
- Rana, R and Bhargava, S. **"Bridging the skills gap of women workers of informal sector in India for sustainable development"**, International Journal of Economic Research 14(18):453-463, 2017, https://www.researchgate.net/publication/322491700_Bridging_the_skills_gap_of_women_workers_of_informal_sector_in_India_for_sustainable_development, accessed Jan 2018

(Refer Slide Time: 33:13)

- FICCI, EY. *"Creative arts in India: Theatre, dance and crafts industry"*, December 2016
- 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
- Roy, Brajdeo Prasad. *"Technique of Making Stone Images in India"*, in Sinha, C.P. *"Art, Archaeology and Cultural History of India (U.N. Roy Felicitation Volume)"*, Part I, B.R. Publishing Corporation Ltd., Delhi, 2006, p.33
- Kapoor, Subodh. "The Indian Encyclopaedia", Volume 1, http://books.google.co.in/books?id=SDh2WjvLo7gC&pg=PA6067&lpg=PA6067&dq=khondalite+stone&source=bl&ots=pqLxXC06sA&sig=IS9V-oJXZSECrlygkqwemCtOQR8&hl=en&sa=X&ei=NalZT670MoHYrQfkkajCDQ&ved=0CDoQ6AEwAw#v=onepage&q=khondalite%20stone&f=false, p. 6067, searched through Google, 20 Jan 2017, 22:00
- Khanna, P. **"Material and Technology – An inventory of selected materials and technologies for building construction"**, Project report to CDKN, Development Alternatives Group, New Delhi, 2011
- 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, Gurgaon, 2009
- Mubayi, Y. **"Policy Gaps Study on the Crafts Sector in India"**, 2016
- Patel, Nimish, Chauhan, Muktirajsinhji and others. **"Stone Buildings of Gujarat"**, School of Interior Design in collaboration with Gujarat Mineral Research & Development Society, 2010
- Ranjan, Aditi and Ranjan, M.P. (Ed.) **"Crafts of India: Handmade in India"**, Council of Handicraft Development Corporations (COHANDS), New Delhi, Development Commisioner (Handicrafts), New Delhi, National Institute of Design (NID), Ahmedabad, and Mapin Publishing, Ahmedabad, 2005

(Refer Slide Time: 33:15)

•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 117-127
•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, Gurgaon, 2009

(Refer Slide Time: 33:17)

• 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
• Hudson, J. "Interior-Architecture Now", Laurence King Publishers, 2007
• Jaitly, Jaya. "The Craft Traditions of India", Lustre Press Pvt.Ltd, New Delhi, 1990
• Jaitly Jaya. "Crafts Atlas of India", Niyogi Books, N.Delhi, 2012
• Khanna, P. "Material and Technology – An inventory of selected materials and technologies for building construction", Project report to CDKN, Development Alternatives Group, New Delhi, 2011
• 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, Gurgaon, 2009
• Pandya, Yatin. "Concepts of Space Making in Traditional Indian Architecture", Mapin Pub.Pvt.Ltd., Ahmedabad, 2005
• Pandya, Yatin. "Elements of Space Making", Mapin Pub.Pvt.Ltd., Ahmedabad, 2007
• Parmar, V.S. "Wood Carvings of Gujarat", Pub. Division. Ministry of Information and Broadcasting, Govt. of India, 2001, New Delhi
• Patel, Nimish, Chauhan, Muktirajsinhji and others. "Stone Buildings of Gujarat", School of Interior Design in collaboration with Gujarat Mineral Research & Development Society, 2010
• Ranjan, Aditi and Ranjan, M.P. (Ed.) "Crafts of India: Handmade in India", Council of Handicraft Development Corporations (COHANDS), New Delhi, Development Commisioner (Handicrafts), New Delhi, National Institute of Design (NID), Ahmedabad, and Mapin Publishing, Ahmedabad, 2005
• Saraf, D.N. "Indian Crafts – Development and Potential", Vikas Publishing House Pvt. Ltd., New Delhi, 1982
• Taylor, Diana. "Transculturating Transculturation", Performing Arts Journal, Inc. 13 (2), 1991, 90-104.
• Trivedi, R.K. "Wood Carvings of Gujarat", Census of India 1961", Volume V, Gujarat, Part VII – A (2)

(Refer Slide Time: 33:19)

•Boner, A; Sarma, SR; Baumer, B. "**Vãstusũtra Upaniṣad**", Motilal Banarsidass Publishe, 1996, pp 1-29
https://books.google.co.in/books?id=O2eKhTXstG4C&pg=PA2&lpg=PA2&dq=In+India,+unlike+in+Europe,+
no+principle+distinction+is+made+between+fine+arts+and+practical+crafts.&source=bl&ots=7qTgUKWQD
T&sig=VqjpWgXTSXp5ZPuYBxUE_XOrr0U&hl=en&sa=X&ei=MQrUVNPtMInauQTLyYDQDA&ved=0CB0Q6AEwA
A#v=onepage&q=In%20India%2C%20unlike%20in%20Europe%2C%20no%20principle%20distinction%20is%20
made%20between%20fine%20arts%20and%20practical%20crafts.&f=false, accessed through Google, Jan
15, 16:00
•Campbell, Jeffrey Y (ed.), "**Lac-Turnery and the Lacquerware Industry**", Chapter 3, Case Study 2, in
"Women's Role in Dynamic Forest-Based Small Scale Enterprises. Case Studies on Uppage and
Lacquerware from India", FAO (Food and Agricultural Organization of the United Nations) Corporate
Document   Repository,   Forestry   Department,   Rome   1991,
http://www.fao.org/docrep/x5859e/x5859e04.htm, 13Dec 12, 17:42, searched through Google
•Campean, M. "**Timber Drying Methods – Passing through History into the Future**" in Moren, Tom and others
(ed). "Proceedings of the Eleventh International IUFRO Wood Drying Conference – Recent Advances in the
Field   of   Wood   Drying   ",   Skelleftea,   Sweden,   Jan   18-22,   2010,
http://www.ltu.se/polopoly_fs/1.58969!srapproved%20-%20proceedings.pdf#page=11, searched through
Google, 15Dec 12, 15:00
•Risatti, H. "**A Theory of Craft: Function and Aesthetic Expression**", The University of North Carolina Press, 2013
•Author Unknown, "**Regional classification of Floor Art - Northern and Eastern parts of India**", Journal
Shodhganga, Chapter 2, Volume 8, retrieved from
shodhganga.inflibnet.ac.in/bitstream/10603/4605/8/08_chapter%202.pdf, 10th Aug 15, 17:40 hours, through
search engine Google

Thank you.