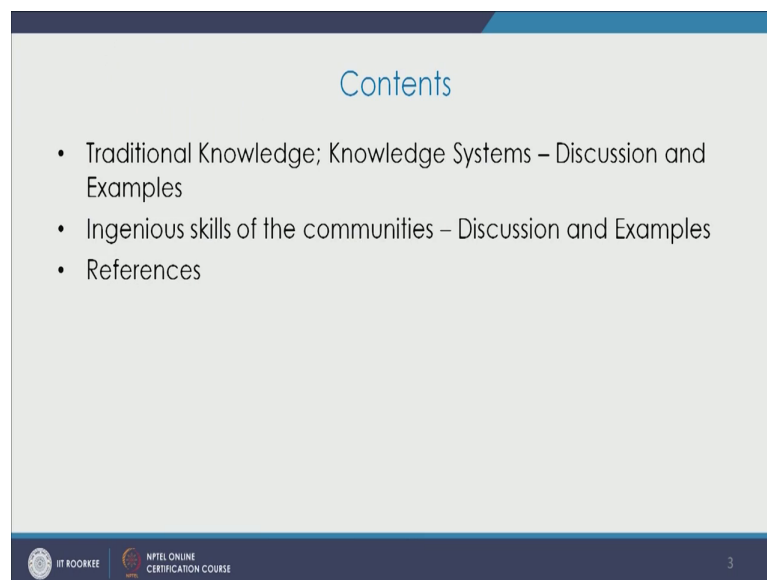


Role of Craft & Technology in Interior-Architecture
Prof. Ar. Smriti Saraswat
Department of Architectural & Planning
Indian Institute of Technology, Roorkee

Lecture – 07
Traditional Knowledge Systems and Ingenious skills of the communities

Namaste! Hello everyone! Welcome to the NPTEL course Role of Craft and Technology in Interior-Architecture. My name is Smriti, I am an Architect. So, we are discussing today module number 7 and it talks about Traditional Knowledge Systems and the Ingenious Skills of the Communities.

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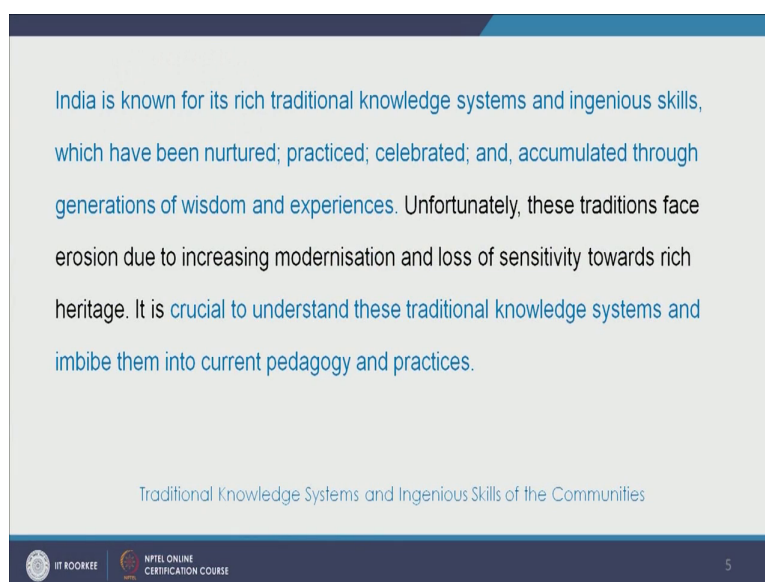
The broad contents what is traditional knowledge, traditional knowledge systems. We would discuss them with some examples; what do you mean by the engineer skills of the communities and what are some useful references for all of us?

So, traditional knowledge is interchangeably used as local knowledge, indigenous knowledge, and will see throughout this module that how they are different or similar, but most of these terms refer to the knowledge which is accumulated and practice and celebrated by communities. The indigenous people and there are lot of researches, which have proved that more or less these terms connote to the indigenous people and the

knowledge systems that they have developed over a certain period of time in a particular area. So, we will talk about all of this, we will talk about few indigenous people or the communities which they belong to.

The ingenious skills that they possess different kinds of skill sets and again as the focus has been since the previous module; how do we understand them? How do we document them? When we transfer it share it disseminated and how it could contribute to our better understanding of traditional knowledge systems, interior architecture and the entire course that we are right now discussing.

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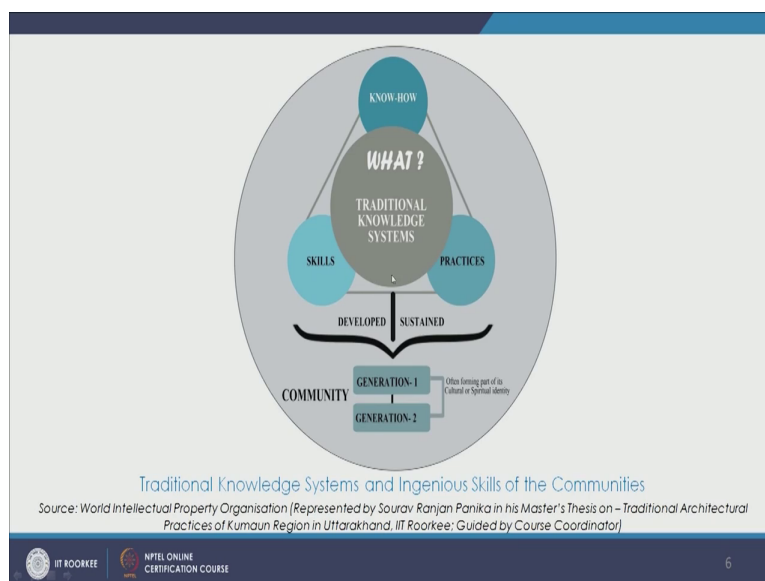
So, India is known for it is rich traditional knowledge systems and ingenious skills, they have been developed, nurtured, practiced, celebrated; and accumulated through generations of wisdom and lot of experience. So, it is very famous and India is known all over the world for these rich traditions traditional knowledge systems.

Unfortunately, what is happening is that these traditional knowledge systems and ingenious skills possessed by the communities. They are facing erosion and there are several reasons for that the major one being the increasing modernisation and loss of sensitivity towards the rich heritage. So, it is very important it is very crucial, that we understand these traditional knowledge systems and we try to imbibe them in a current

pedagogy and practices. So, that is what the crux is for this entire module and we will try to understand through some examples.

So, if we try to understand what is traditional knowledge systems? Basically it has 3 nodes.

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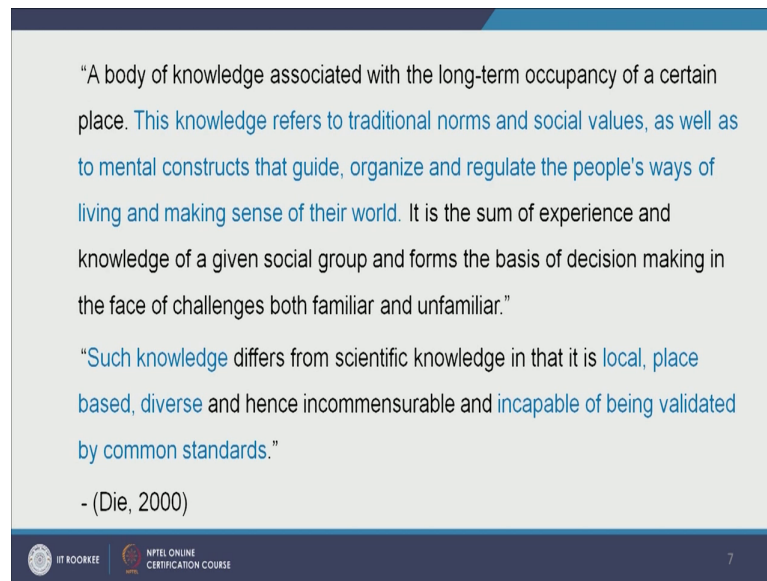


So, know how, skills, practices. Now these knowledge systems they are developed and sustain by a community. And then they are passed on from one generation to another generation and this knowledge system. So, traditional knowledge systems they form a very important part of their cultural or spiritual identity.

So, these systems not just take care of functional aspects but they are also hugely related to their ethos and their spiritual identity and they come from the several accumulated experiences through several generations. So it becomes very important that we try to understand them document them or study if they are already documented and try to you know link try to talk about their continuity in the contemporary practices. How we could benefit even today from them.

So, traditional knowledge systems or traditional knowledge is it has been explained as a body of knowledge associated with the long term occupancy of a certain place and this I am quoting.

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"A body of knowledge associated with the long-term occupancy of a certain place. This knowledge refers to traditional norms and social values, as well as to mental constructs that guide, organize and regulate the people's ways of living and making sense of their world. It is the sum of experience and knowledge of a given social group and forms the basis of decision making in the face of challenges both familiar and unfamiliar."

"Such knowledge differs from scientific knowledge in that it is local, place based, diverse and hence incommensurable and incapable of being validated by common standards."

- (Die, 2000)

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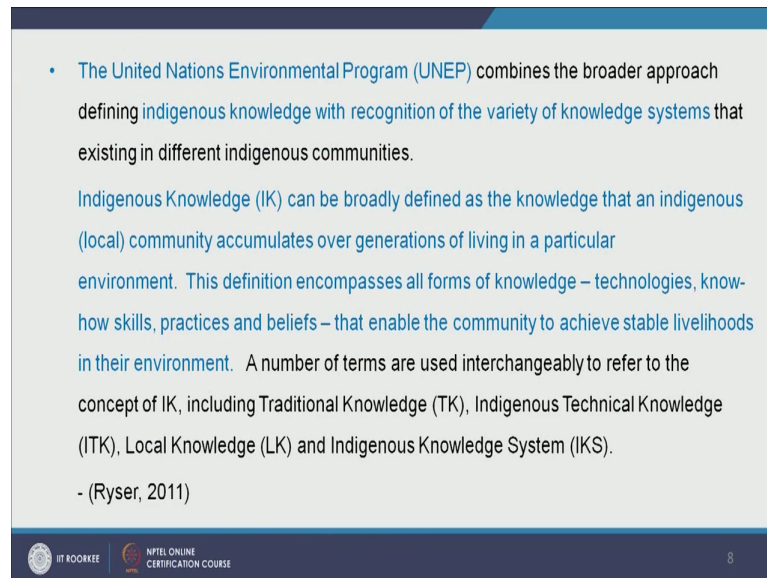
This knowledge refers to traditional norms and social values, as well as to mental constructs that guide, organised and regulate the people's ways of living and making sense of their world. So, this is what we have been discussing we also discuss a little bit in the previous module. So, how to how to have a certain meaning embedded within these systems, how to understand those embedded meanings to decode them, and how people communicated, how they made sense of the world around them?

When, we talk about traditional knowledge systems they predominantly focused on understanding the hidden meanings, the stories and the narratives that create the sense of world around people. It is the sum of experience and knowledge of a given social group and forms the basis of decision making, in the face of challenges both familiar and unfamiliar. And another important thing here again I am reiterating it like we did in the last module also. "Such knowledge differs from scientific knowledge and it is incapable of being validated by common standards." So, we may not always have a factual information or a theoretical construct, but these are passed on through oral traditions and the come up as part of lifestyle of varied communities.

They are very local place based diverse. So, it is very challenging sometimes to understand them study them, but once some efforts are made, the kind of knowledge sharing that happens. And the kind of understanding that one is able to develop for the

varied disciplines or subjects that they may get indulge into is of prime importance. Like in the beginning I just discuss that you know this term traditional knowledge is interchangeably used with other terminologies. So, United Nations environmental program UNEP.

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• The United Nations Environmental Program (UNEP) combines the broader approach defining indigenous knowledge with recognition of the variety of knowledge systems that existing in different indigenous communities.

Indigenous Knowledge (IK) can be broadly defined as the knowledge that an indigenous (local) community accumulates over generations of living in a particular environment. This definition encompasses all forms of knowledge – technologies, know-how skills, practices and beliefs – that enable the community to achieve stable livelihoods in their environment. A number of terms are used interchangeably to refer to the concept of IK, including Traditional Knowledge (TK), Indigenous Technical Knowledge (ITK), Local Knowledge (LK) and Indigenous Knowledge System (IKS).

- (Ryser, 2011)

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They have tried to combine a broader approach and this has been quoted by Ryser also in his research done in 2011.

So, how UNEP is defining indigenous knowledge with recognition of the variety of knowledge systems, that existing in different indigenous communities, So, indigenous knowledge indigenous people and the variety of knowledge systems, that have been practiced by them, indigenous knowledge can be broadly defined as the knowledge that an indigenous that is local community accumulates over generations of living in a particular environment.

This definition encompasses all forms of knowledge this is very important technologies, know how skills, practices and beliefs also, that enable the community to achieve stable livelihoods in their environment. And, number of terms are used interchangeably to refer to the concept of indigenous knowledge, including traditional knowledge, indigenous technical knowledge, local knowledge, and indigenous knowledge system.

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• “Indigenous knowledge, traditional knowledge and local knowledge are varied ways of labeling the knowledge systems developed and used by more than 6000 indigenous peoples throughout the world.”

- (Ryser, 2011)

Documenting Traditional Knowledge; Knowledge Systems

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So, they are used quite interchangeably, but more or less they referred to the indigenous people the communities and their knowledge systems. So, “Indigenous knowledge, traditional knowledge and local knowledge they are varied ways of labelling the knowledge systems developed and used by more than 6000 indigenous peoples throughout the world.”

So, we often use them interchangeably and they have certain differences or similarities, but going by all these researches that I have tried to put here for our reference. They are varied labels you know to refer the knowledge systems, which are developed and used by indigenous people and the communities.

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“Indigenous peoples’ ingenious skills and knowledge systems vary from locality to locality, region to region reflecting the cultural distinctiveness for each people resulting from the dynamic and evolving relationship between the people, the land and the cosmos.”

- (Ryser, 2011)

Traditional Knowledge Systems and Ingenious Skills of the Communities



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Further, Ryser tells “Indigenous peoples’ ingenious skills and knowledge systems vary from locality to locality, region to region, reflecting the cultural distinctiveness for each people resulting from the dynamic and evolving relationship between the people land and the cosmos.”

So, this is the last part which I have highlighted here is very crucial to understand. Such knowledge systems they have resulted from a very dynamic and evolving relationship that we see between the people land and the cosmos. So, again here not just addressing to a functionality, but also talking about the entire cosmos the universe where one situate themselves within and the hidden meanings. That give us some stories some narratives and some ways of understanding our nature and environment in a better way further explaining the traditional knowledge systems.

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• The systems of knowledge are part of the global body of knowledge, but due to historical, political, social and cultural events since the expansion of European, Asian and African peoples throughout the world, the knowledge systems of indigenous peoples were subordinated to colonizing powers. The challenges of sustainability in the twenty-first century created a shift in attitude toward not only recognizing indigenous knowledge and equal to other forms of knowledge, but essential to understand and incorporate into the global body of knowledge for the benefit of all human kind. - (Ryser, 2011)

Traditional Knowledge Systems; Knowledge; Indigenous People

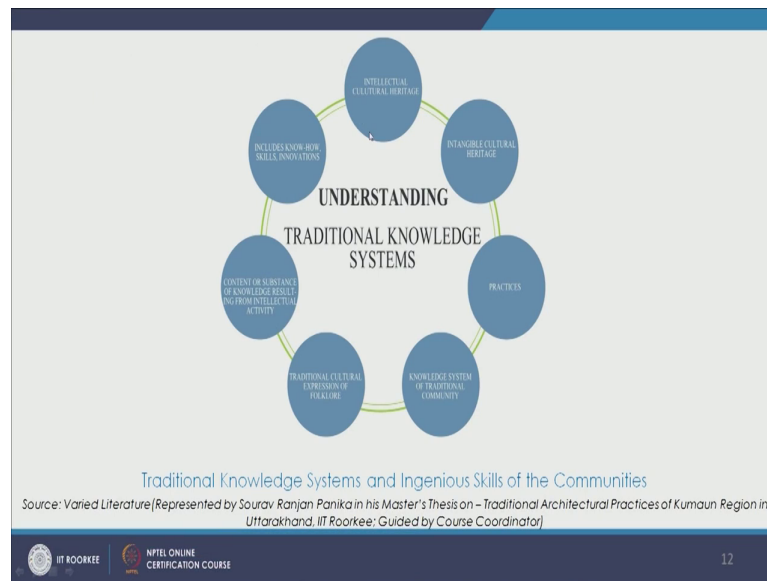
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The systems of knowledge are part of the global body of knowledge, but due to historical, political, social, and cultural events. Since, the expansion of European, Asian and African people throughout the world, the knowledge systems of indigenous peoples was subordinated to colonising powers.

So, these systems was subordinated and there was lot of colonisation that happened, but again challenges of sustainability that we see in the 21st century, they created a shift in attitude toward not only recognising indigenous knowledge and equal to other forms of knowledge, but essential to understand and incorporate into the global body of knowledge for the benefit of all human kinds.

So, we see the sudden upsurge and we are again talking about sustainability issues from the perspective of indigenous materials, indigenous communities, local skills, native knowledge systems, and base this whole new definition of sustainability which lot of researchers practitioners they are trying to address through either through education or through the projects that they practice and build. So, if you try to understand this umbrella term traditional knowledge systems, it refers to several things.

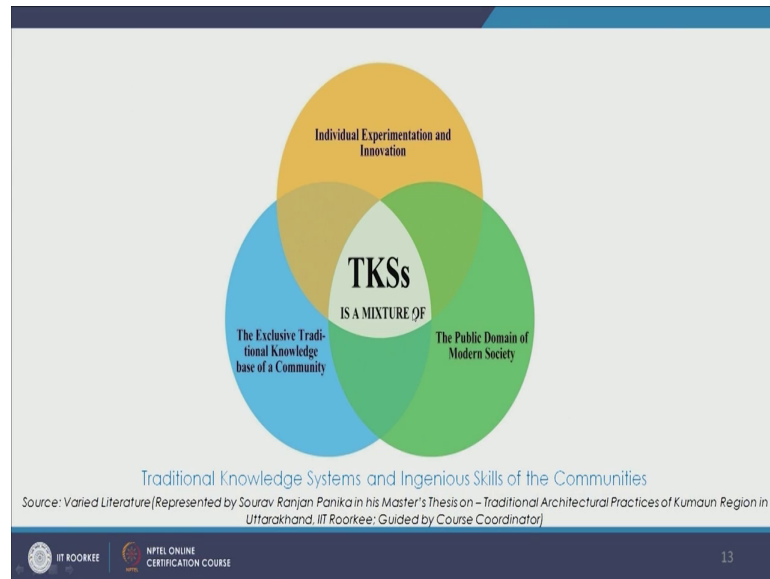
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So, it could refer to intellectual cultural heritage, tangible intangible cultural heritage, several practices that have been carried in varied disciplines, knowledge system of traditional community, it could be traditional cultural expression of folklore.

Content or substance of knowledge, resulting from intellectual activity it is something that includes know how, skills, innovations. So, this is a huge term, it is an umbrella term and it refers to several things. Now, if we will talk about particularly interior architecture throughout the course, we will see several knowledge systems or practices region based community based and we could focus on the discipline of interior architecture, but otherwise there are varied disciplines there are various terminologies and issues where one could try to understand traditional knowledge systems in that gamut. It could be medicines and several other disciplines or things. So, if we try to create a sort of an overall set and try to you know decipher into subsets.

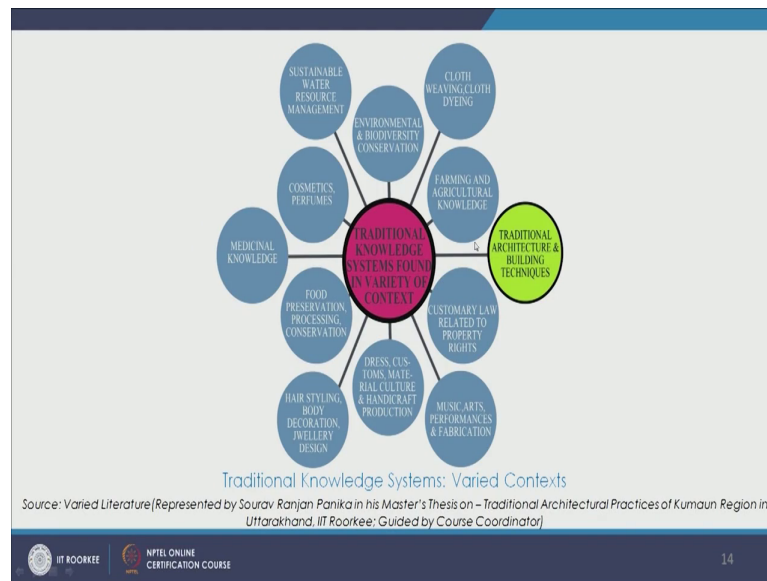
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Traditional knowledge systems could be explained as a mixture of say individual experimentation and innovation, the exclusive traditional knowledge base of a community and the public domain of modern society. So, all the different factors contribute to this larger knowledge system, starting from an individual to the public domain where you know the this knowledge system is shared and brought forward and it has it is being implemented and discussed about.

So, traditional knowledge system so, to say is a challenging term to understand since it has several connotations and associations and it is gigantic terminate itself, but like I said few slides back, we could probably focus on the interior architecture domain and try to understand through the subsequent modules and the projects, what traditional knowledge systems mean in the context of interior architecture.

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So, taking from the previous 2 slides going ahead, they are different contexts where you know we could discuss traditional knowledge systems. The context could be the medicinal knowledge; cosmetics, perfumes, food preservation, processing, conservation sustainable water resource management, environmental and biodiversity conservation, the cloth weaving, cloth dyeing textile industry.

Farming and agricultural knowledge, food industry customary law related to property rights, music, arts, performances, fabrication, customs, material culture, handicraft production, hair styling, body decoration, jewellery design, and of course, traditional architecture and building techniques.

So, this is a huge plethora and one could situate traditional knowledge systems within all of these contexts discussing the details. So, wherever one takes a plunge and goes into the deeper details; traditional knowledge systems are situated everywhere. Because, irrespective of whether we are talking about architecture, we are talking about medicines, all of these have been developed by indigenous communities, in particular regions, in particular environments, through learning through experiences and slowly they have evolved over time.

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This is a little bit discussion on what kind of data do we you know associate with traditional knowledge systems and what kind of sources could we have for traditional knowledge systems. So, based on relevance and characteristics of the traditional knowledge systems, the data could be empirical, historical or conceptual.

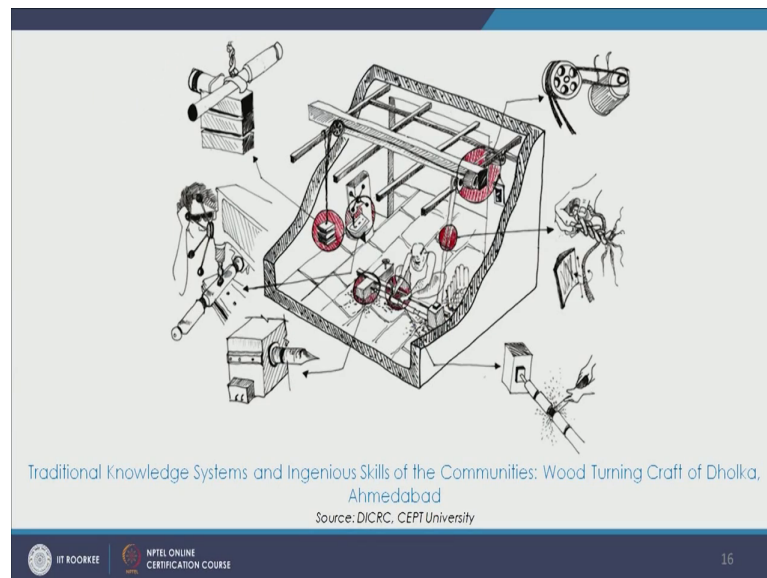
Now, empirical data is something which anyone can in principle obtained in a span of time through experiences learning by doing. Historical data which is maintained in oral traditions or it is maintained through historical records, through historiography. Conceptual data is something which is conceptually created and this conceptual data evolves out of the empirical and the historical data.

So, one has to depend on the previous to for this. And, depending on the sources the traditional knowledge systems could be derived from individual experience from contemporary modern concepts or it could be derived from traditional knowledge systems passed on for generation within the traditional knowledge holder's community.

So, this third one is something that this course particularly takes into consideration and acknowledges. The kind of knowledge systems that have been developed by indigenous communities and they have been passed on from one generation to another. So, these are all sort of concepts and different contacts in which traditional knowledge systems could

be discussed about. And of course, we will discuss about interior architecture and traditional knowledge systems in the modules to come.

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This is something I find by interesting and a little bit of this I have discussed in very initial modules also.

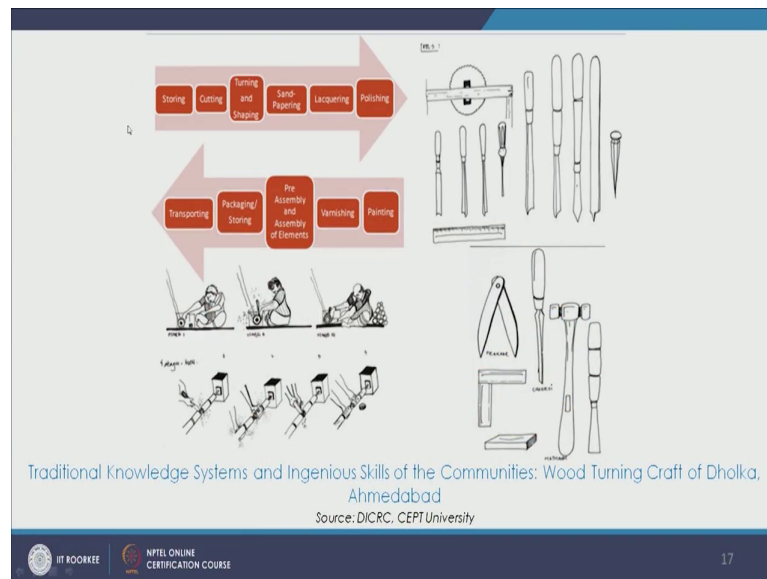
So, this was one workshop where the DICRC team in which I was also a part of. We were documenting the workshop or the workshop here means the workspace of an artisan community in a place called Dholka, which is situated near Ahmedabad. So, what we were trying to understand is that this community, it practices the very old craft or wood turning and then applying lacquer on it and it is called *Kharadi* come in the local parlance. So, the team documented this is a cross section and it explains you know where all in the workspace what kind of machines are situated or the tools are placed.

So, this is a pulley system here the turning happens, which is laying the turning here the drilling happens and then the kind of this rope mechanism and the weight mechanism which works this pulley out. So, this kind of documentation itself is very unique we just sometimes end up documenting the end product. Also the associated process, but what is the work space where such communities work? What kind of requirements do they want? What kind of machinery and tools do they use? And what is so, unique about them?

What is their entire hand work like? How many hours do they you know sit at a stretch?
So, all this documentation is also very crucial.

So, after documenting the workspace and understanding the entire process the other important aspects for also covered.

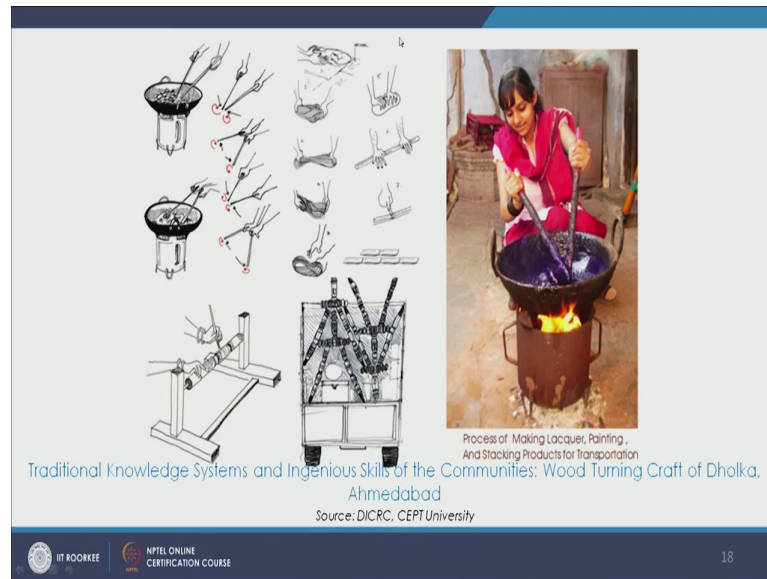
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So, right from you know where the wooden logs are stored and their cut and in the turning and shaping happens. So, their all stages and finally, the prototypes which are developed by the artisans and the craft persons they are transported to the market, that kind of process documentation and like, I was telling how do they sit and what are the kind of stages in which they do the cutting and chiseling and how is the wood turn then you know the entire process, what are the different sets of specific tools which are required for this kind of prototype making. Why I have put these cases it is very interesting, because we are talking right now about some prototypes or product making.

But, this craft this has already extended into the domain of space making, you know the partition screens and furniture and different kinds of spatial elements that could be generated through this knowledge system and the skills, which is own by the which are own by the community and the families who stay here in Dholka. Further ahead we also learnt how the *lacquer* is made.

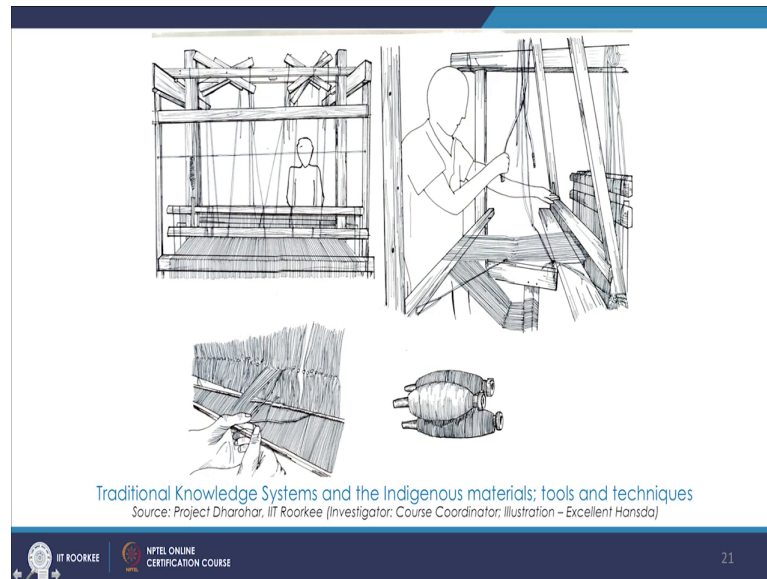
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You know how it is heated what all is mixed and because the it is made by the community they make it and women then painted on the turned wood. So, how it is done how the women painted? And finally, how it is transported even that, if you could see how these are called *Ghodiys* they are baby cradles, which are the traditional products which this community makes and their highly in demand.

So, how they have even stacked it you know in a truck. So, that it could reach in the most effective way to the market. So, all sorts of documentations that help us understand the knowledge systems in the skills and how we could actually integrate them within the current contemporary pedagogy and practices. And we could use the traditional knowledge systems and skills and integrate them with contemporary expressions and come up with interesting ideas. Where the artisans and the traditional knowledge system holders their role is paramount. They are the ones who guide and the contemporary researchers and designers learn from them.

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This is another documentation of traditional knowledge system. So, like I discuss that right now we are talking about the entire plethora not just the interior architecture part which we will cover.

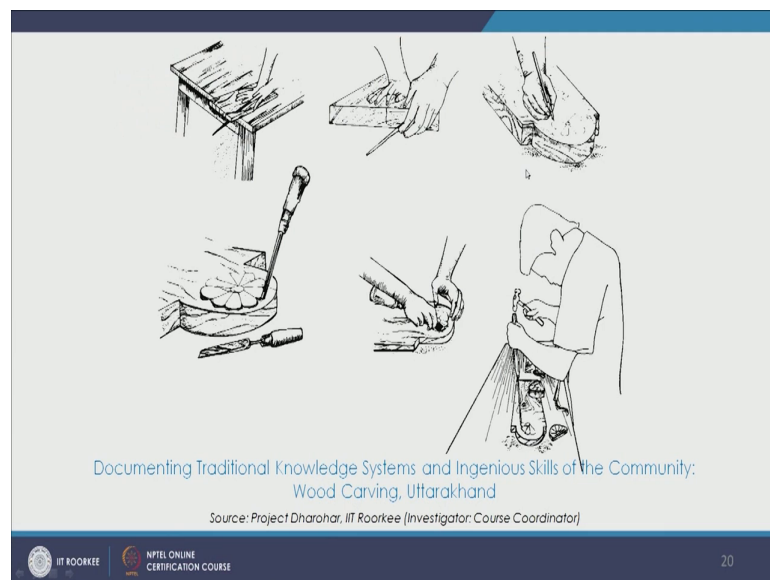
So, we are talking about different kinds of traditional knowledge systems in different forms of expression. So, here this is weaving earlier it was woodturning. So, Uttarakhand is very known for it is you know weavers community and the handlooms. So, this is one cluster called Mohanpura cluster, in Roorkee itself and there were few craft persons who came from Mohanpura and then they were few others who came from Srinagar. And, this documentation was again a part of project Dharohar and the national workshop that happened at IIT Roorkee, it happened in august 2015.

So, even you know what kind of yarns do they use, what is warp what is weft and how the weaving is done, how the weaver sits, what are their postures. For how long do they sit? So, there are lot of details covering all of them in a single lecture or a module like this would be very difficult, but you know just starting from these traditional knowledge systems and how the weaver community works? Today the contemporary researchers and designers are also exploring the structure within these weaves into the interior architecture; you know the architectural clothing, architectural skin, designing buildings

which you know take ahead this traditional knowledge system of weaving into space making creation of interior architecture.

So, this link the tradition and the continuity the tradition knowledge systems and the contemporary explorations and expressions this marriage is very important. This is very important and documenting the knowledge and skills and traditional knowledge system it should not end at documentation, but having said that until unless the documentation is done that understanding is established going to the next level is; obviously, not possible. So, we begin from here.

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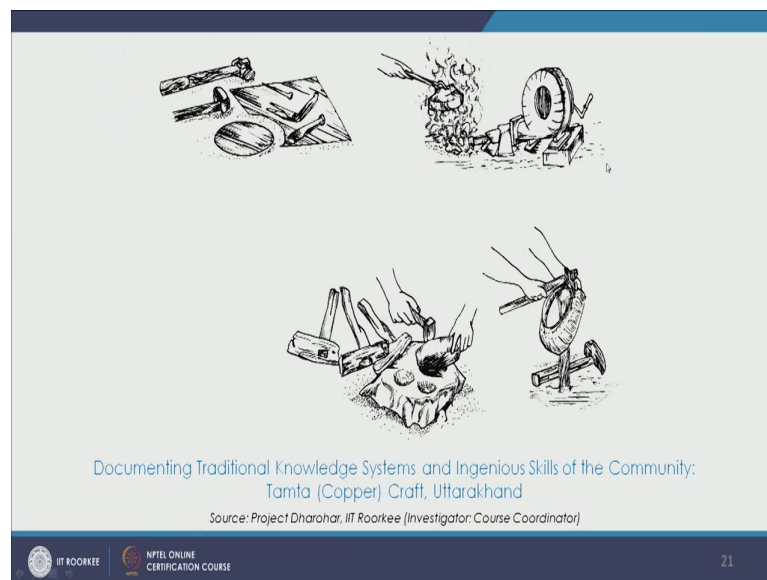
This is another one this is again the wood carving craft of Uttarakhand and it is embraces the indigenous knowledge systems, traditional knowledge systems, and the ingenious skills of the community the wood carvers, the carpenters.

So, you know the entire process on the piece of wood where the begin they just draw the kind of carving that they want to do the motives, and nobody actually gives them a proper working drawing. You know the artisans or the craft persons the pickup the motives from their memory or from the nature, what they see around them or what is has been the part of their daily life or the culture. So, they start from the drawing and then

you know the chiseling happens varied tools are used and then the other steps when we discuss the tools and techniques probably there we can take one example and elaborate.

So, like we saw in the previous lecture also, these skills and knowledge systems are seen within the interior architecture also and we see lot of carving in furniture, in the facade of the buildings in the interiors. So, again trying to you know connect the dots and then taking from here what could be also done in contemporary times, but not losing on the originality and the essence of what the community has been practicing.

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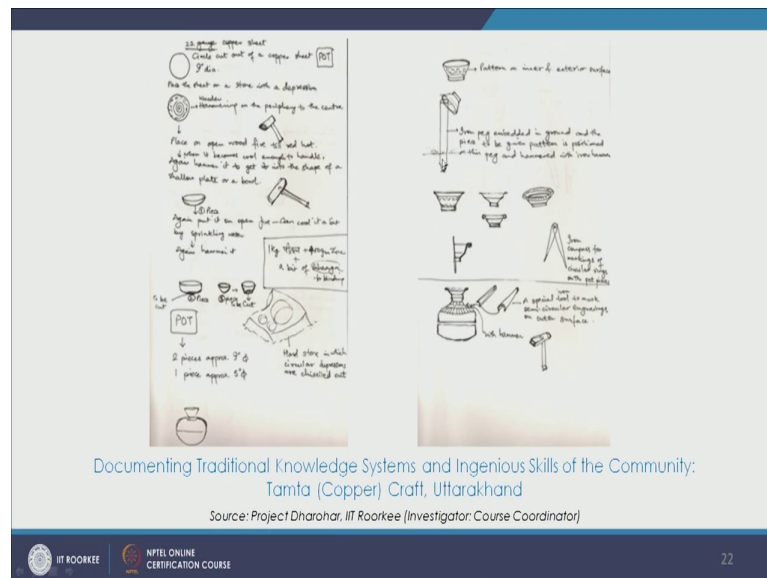


These is the *Tamta* craft here and see what is most important is that these are to craft forms they are not just expressions or aesthetics, they talk about material studies, they talk about science. So, here this is they talking about copper a metal that could be used for making you know several objects of used and at what particular temperature it is heated and then it is beaten and then certain objects are you know chiseled out of it and different kind of tools that respond to this process and the knowledge.

So, there is there entire science behind all these indigenous people and their knowledge systems and the way they have carried it the way they have embraced it, celebrated it. So, I am just trying to put certain examples that make us understand the importance of

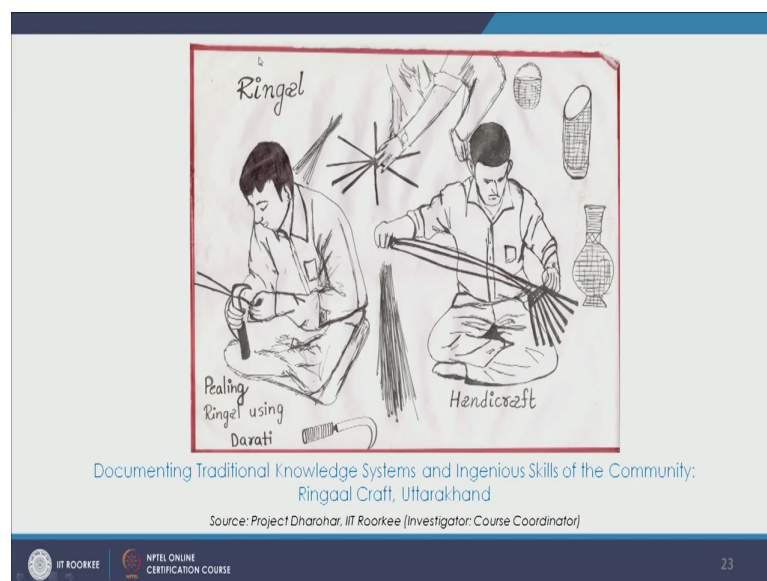
studying the traditional knowledge systems and then we just keep our thoughts open what happens next.

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This is again the same *Tamta* craft and this documentation was done by one of the participants you know. So, the entire stage by stage process the kinds of tools and the kind of final objects of use that they which were created and even the pattern and the motives and the aesthetics, which was related to the making.

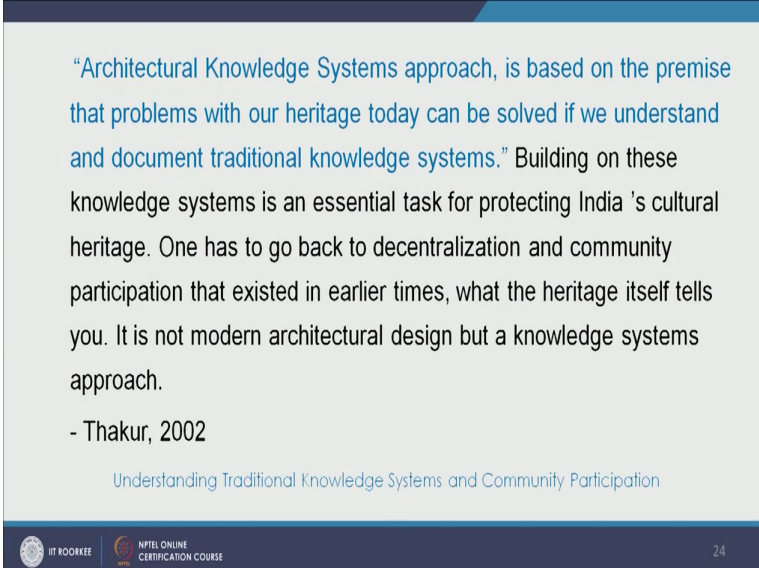
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Another thing is *Ringal* Uttarakhand is also known for *Ringal* craft *Ringal* is kind of Bamboo and it is found in abundance in Uttarakhand. And the indigenous people they have the knowledge of how to make you know mats out of it or the baskets out of it. Again, so, we could make objects out of it, but this traditional knowledge system is also been expanded into the domain of space making and several applications have been done which you know, prevent dampness and some partitions screens have been made out of it, but until unless it is known that you know this material exist in this region, which has damp proofing qualities, it could be used as a floor mat or it could be used for several other contemporary applications.

Until unless this traditional knowledge system is documented these skills are learnt how would somebody go one step ahead and create something unique, which is carrying forward of this custom into a new domain. Now we have been talking about different art and craft forms and the associated traditional knowledge systems and architecture interior architecture is not devoid, it also has it is own set of traditional knowledge systems practiced by several communities, in the words of Dr. Nalini Thakur.

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“Architectural Knowledge Systems approach, is based on the premise that problems with our heritage today can be solved if we understand and document traditional knowledge systems.” Building on these knowledge systems is an essential task for protecting India 's cultural heritage. One has to go back to decentralization and community participation that existed in earlier times, what the heritage itself tells you. It is not modern architectural design but a knowledge systems approach.

- Thakur, 2002

Understanding Traditional Knowledge Systems and Community Participation

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“Architectural Knowledge Systems approach is based on the premise that problems with our heritage today can be solved if we understand and document traditional knowledge systems.”

Building on these knowledge systems is an essential task for protecting India's cultural heritage. One has to go back to decentralisation and community participation that existed in earlier times, what the heritage itself tells you. It is not modern architectural design, but a knowledge systems approach. Very appropriately she is explaining that it is not just you know it is not just about taking the modern architectural design and integrating the knowledge systems, without the community participation. It has to be community participation, it has to be a decentralisation and everybody has to work hand in hand. And she emphasises very strongly that documenting the traditional knowledge systems and ingenious skills and learning them is a very essential part that could lead to protect India's cultural heritage.

Since, we are talking about the architectural heritage in the traditional knowledge systems these are some glimpses a few residences.

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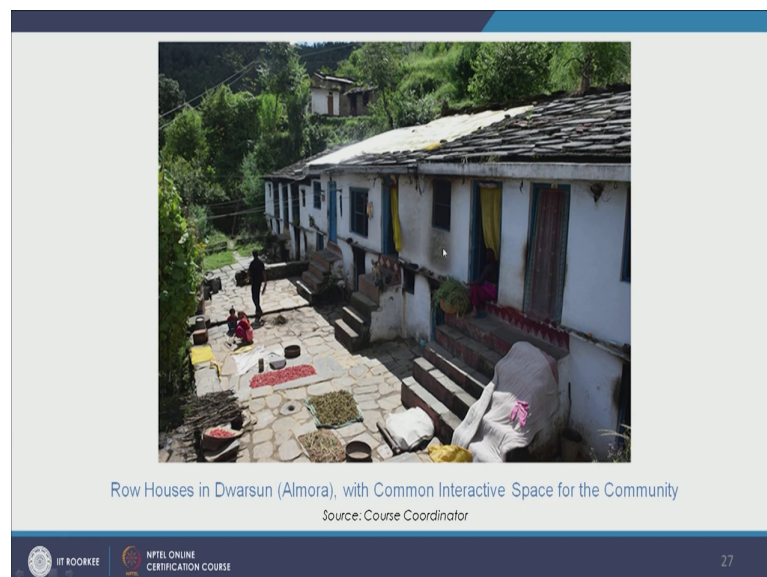
This is again a 300 year old residence in a place called Dwarahat in Uttarakhand and you know it shows the community life and this huge courtyard space which is used by the joint family, to just come out in the evening, dry the spices or grains, sit together, talk. And it has lot of intricate carvings also it is not very visible in this picture.

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Again another residence there, this is a row housing in a place called Dwarsun.

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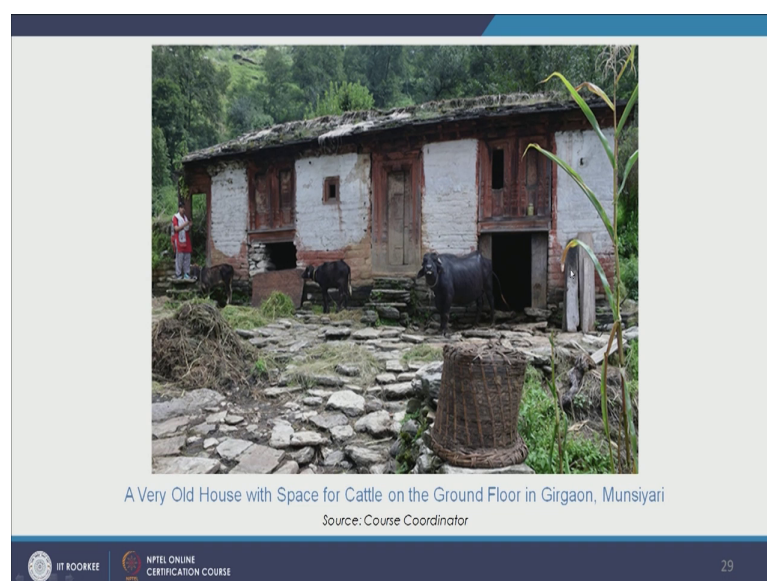
What I really loved about this picture is again this space. And how they have applied their own traditional knowledge systems and created these houses, altogether the community has made these houses. And here again this is huge common interactive space which is used for dialogue.

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This is a very interesting case that we came across, this is a pit loom pit loom is very rare these days because you know it is very difficult it is posture is difficult and the kind of production that happens through this is also less. So, this is a very old pit loom and this we found in a house in a place called Darkot in Munsiyari. This is made out of the indigenous wood, which is called *Thunair*. It is as old as the house 300 years old and there is no deterioration no rotting and it is in a very good condition.

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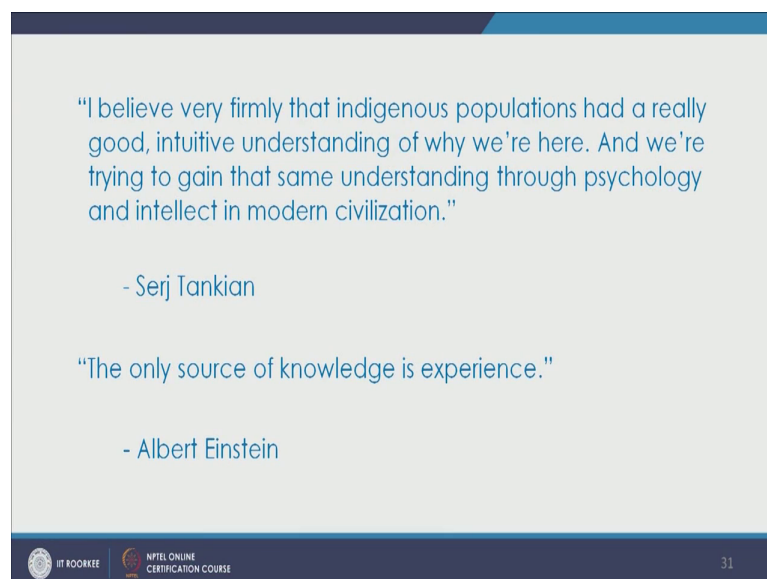


Here we see again a very old house it is quite dilapidated, but we see here the space for cattle. So, these are all traditional knowledge systems, the cattle was placed on the ground here in on this floor for several reasons.

So, when we see case studies from Uttarakhand and discuss in detail the *Koti Banal* Style of architecture and some cases like this, we will try to understand the science behind this. It has a lot to do with the climate and yeah I think we will discuss in detail. These are some indigenous crops, which are grown by the community and they have a thorough knowledge of you know which crop is good for which climate, for which part of the year, which crop has medicinal properties. So, all this is traditional knowledge which is nurtured by the community and then I think it is just a repository a treasure which from which we can learn a lot.

So, I would like to end again by 2 very interesting quotes.

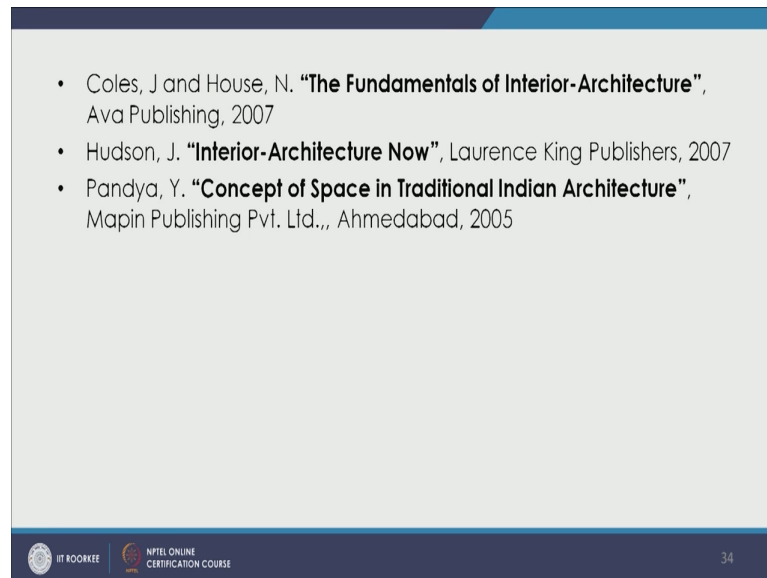
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I believe very firmly that indigenous populations had a really good intuitive understanding of why we are here. And, we are trying to gain that same understanding through psychology and intellect in modern civilisation and again this very famous quote by Einstein "The only source of knowledge is experience."

So, when we talk about traditional knowledge systems they have developed through generations of wisdom and experiences and they are very empirical people have done them and learnt through the ages. So, they are very crucial to be understood and documented and implemented and to learn from.

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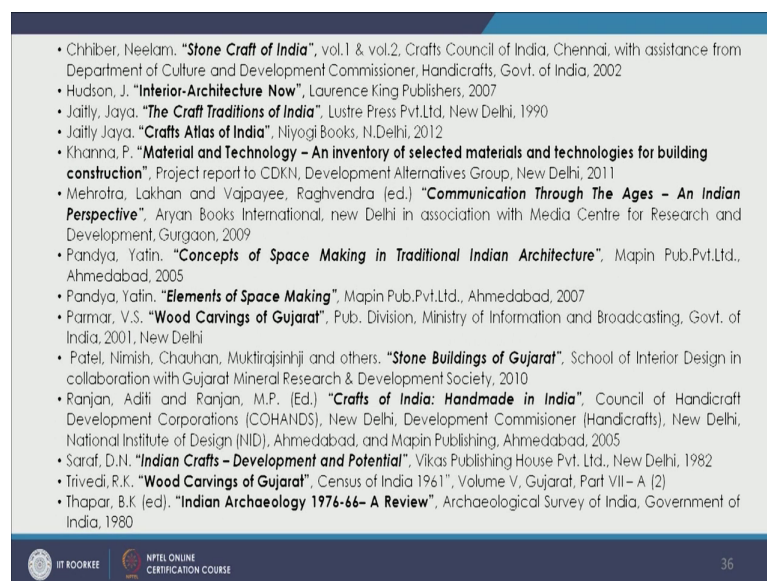
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Our next module we will talk about Interior-Architecture Documenting Materials: tools and techniques some references again it is all the references are combined.

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Different aspects different subjects' interior architecture, craft, traditional knowledge systems. material. studies.

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All of them are I have tried to collate, because they are quite interrelated and we are talking about some eclectic subjects. So, these references are going to be very useful. Specially to all the kinds of scholars and not just architecture say craft art architecture

interior architecture interior design and narratology. So, that is the beauty of this eclectic reference list.

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Again some contributions at I have done specifically.

Thank you.