

Introduction to Ancient Indian Technology
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Module 1
Lecture No 02

Let us start this lecture with a thought process that man is a curious and creature by nature which I had emphasized in the last lecture. I also had told in the last lecture and this is...these are the two characteristics by which man has harnessed the science and technology for a what you call quality life.

And if you recapitulate that what we learnt in the last lecture, we started looking at what is the meaning of science, then we looked at what is the meaning of technology and how technology is different from engineering. And then we also looked at that in our ancient time we were having Shilpa and what is the definition of Shilpa which is a combination of engineering and technology, of course in English we call industry.

And that is why by which you produce a product by using different processes and that we learnt. And also we looked at that the India, in earlier days we called it as Bharat which was dwelling upon harnessing the knowledge that is the meaning of Bharat. And we have a knowledge society, we are having. And what are the strength we are having not only the geographically but also the wealth wise resources? And we are having a very great human resources as I had emphasized, they are intelligent and hard-working people, right?

And that is why I also related that corruption is there in this country because they are intelligent and (hard) energetic people and that is why we are corrupted. But if they were directed properly by imparting better education, they will be the adventure of development in this country. So India is is not really a poor country, it is poorly managed country I had emphasized.

Beside this, we had looked at the chronological aspect of the various dynasty starting from the prehistoric era and Indus Valley Civilization subsequently, the Vedic civilizations and then the what you call other dynasties like your Mauryan dynasty and then your Gupta periods and then there are several Pallavas and Cholas in south, southern side. And there are several dynasty we have looked at it.

So as I told you that recently the IIT Kharagpur have done research and published in the very prestigious journal Nature that our civilization is not started with the 3000 BC rather it is something around 6000 or 7000 BC kind of things. So that is a new input from that and which is...question arises...we are a part of Indus Valley Civilization, we should feel proud of it.

And question arises then, what do you mean by civilization? Because we say that we are a part of a great civilization which is still existing today and a part of you know our culture and rituals are very much integrated with the Indus Valley Civilization. But what do you mean by civilization? Can anybody tell me? Civilization word is basically Latin word that means you are civilized. Earlier days, people were moving in jungles, they were not civilized.

Student: Sir, in my opinion, civilization is a way of life of a group of people....

Professor: Yes.

Student:who do businesses for mutual welfare.

Professor: Welfare. Any any other things? He is right and there is a group of people.

Student: It can be a base or evolution of certain practice or anything.

Professor: Practice having certain culture and certain philosophy and then life. What else? Any other things? So therefore we can call.....

Student: There is a use of technology.

Professor: Yes, that is important. And they also harness the technology for a better life. Therefore we can call I mean like this is a definition what I have framed.

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What do You Mean by Ancient Indian Civilization ?

What are the Specialty of Indian Civilization ?

- ❖ Well Planned rural/urban areas
- ❖ Advanced science and technology
- ❖ Higher and scientific Language & literature
- ❖ Joint Family Concept
- ❖ Spiritual Practices/Indian Philosophy
- ❖ Love for Mother Nature
- ❖ Unity in Diversity
- ❖ Balance in life
- ❖ Searching for Ultimate Truth

“India beyond all doubt possesses a deep underlying fundamental unity far more profound than that produced either by geographical isolation or by political superiority. That unity transcends the innumerable diversities of blood, colour, language, dress, manners and sects.”

Vincent Arthur Smith, Historian (1848-1920)

You may find different definition in the literature. Civilization is a human society with advanced agricultural practice because food is important I told you. Our ancestor has told, ‘anna pratishta deva’. So ‘anna’ is very important.

And with abundant food to donate, donation is a part of our life (time) from since time immemorial. Today we are not donating, we are not giving. We are feeling bad to give, we are becoming more you know like what you call keeping everything, holding it. But that is thing, that is the sign of civilized people. And administrative structure for governance, it is not that you will do whatever you want, you should have governance.

And higher level of spirituality, which is the basis of Indus Valley Civilization or (Indi) (Indo) Indus-Sarasvati Civilization nowadays we are calling it. And the science and technology. And certain innate culture for leading a harmonious and fruitful life, harmony is important and that is being talked about in our scriptures. Several times, it is being emphasized that you will have to lead a harmonious and a fruitful, meaningful life.

You should not live like a an animal from the very morning to the night you will be running for the food, producing or doing. You should have certain goal, certain philosophy in life. So that is what that we will be asking that question. Therefore we call that as a civilization. Of course, there might be small things are there here and there but I have tried to sum it up as a definition of

civilization. Is it making sense to you? Is there anything missing in this definition? If it is so, then we can discuss later on. If you are having now, we can discuss.

So now question arises, how to identify a civilization? In other words, what are the signatures of identifying whether it is a civilization, it is a good or bad or ugly civilization or what is it is? So in other words, how to identify a civilization? What are the properties, characteristics? If you look at the definition I have given, most of the characteristics are included.

So I am giving a clue to answer this question. That means what?

Student: There should be good food arrangements.

Professor: Yes, definitely.

Student: There should be good administrative bodies.

Professor: Yes. What...?

Student: It will be more systematic.

Professor: Systematic. That means people will be having staying in together. That is also very important part. And they will be staying means there should be habitats like and there should be good construction of houses, huts and then these things, right? That means if you look, the urban and rural settlements will be there, right?

And so also the primary producer of food, they should produce themselves. They should not you know like what you call import. They should have their own food, self-reliant, not depend on other. And paying surplus to deity, saints – Today also you know if you look at, in this country we may be having something 2 lakhs to 3 lakhs of saints who lives on others. We donate them and they take food.

Even today, we say we may be poor but we still keep. And that practice is a great practice which is from the time immemorial it is with us. And monumental architecture and art, art is a part of life. Art is very important for human being but we do not have time today to think about art and culture.

So and that needs a very peaceful and life. And system for recording informations, if you look at whatever the you know like Veda, we are having a scriptures which is very....one of the oldest rather that is the oldest scriptures in the entire world. And beautiful you know thought processes, and so exotic, so sophisticated in the nature I sometimes feel how they framed those things at that time. So we are having that.

And development of exact and practical science, today we talk about science, we are teaching science from the class 1, maybe from KG onwards. But we are not teaching the science them. We are just making them to remember, right?

So then it is not science. So they should know practical aspect. If you look at science when I define and say that science in Hindi or in Sanskrit we call 'Vigyan', 'Vishesh Gyan'. Basically, science is what? Science is common sense at the best, right? But we make it sophisticated and complicated and then psychic the people not to take the science and mathematics. That we are doing and we are saying we are educating.

So therefore science and that to practical aspect of science is also very important and interdependent of classes. If you look at like our caste, people are saying, "Oh! Caste is bad," and all those things. Of course, caste in the present form is horrible but caste does not mean. It is basically classification of the people like peasants, craft people, intellectual rulers. It is always there, that is the part of the things, right?

So it was a part of our society, state and its governance. And if you look at, democracy is basically originated in this country. Most of you may not be aware, right? And philosophy, we are having a great philosophy. Of course, recently we are not contributing to philosophy because we are running from pillar to post for the food and we do not know what we are doing. We are busy in our (noth) for nothing. Therefore we do not have time to think, right?

So and then we have....we do not have much fillers. But we are having a very you know plethora of philosophy and in our scriptures. And spirituality, it is the base of our life. And even today, people are being attracted to this country for spirituality. And we have having unique unique cultural values which are receding day by day. So these are the things what we are having. And if you look at, what are the oldest civilization of the world? Can anybody tell me? Because Indus

Valley Civilization is fine, we are a part of it. But what are the other in civilizations, oldest civilizations?

Student: Mesopotamia.

Professor: Yes. Any other?

Student: Harappan civilization.

Professor: Harappan is Indus Valley Civilization. Right, what we are discussing now. Anybody? Minor civilization, yes, fine. There are several of them but I have just jotted down, the Mesopotamia civilization what people are saying something 3500 to 750 BC. Then, next oldest is the Indus Valley civilization, 3000 to 1500 BC.

If you look at, IIT Kharagpur research has shown that we are older than the Mesopotamia. And recent this thing and which has been published in journal, very prestigious journal Nature. And Mayan that is 2600 and 700 BC; Chinese, 2070 to 300 BC; Greek, 800 to 500 BC; Roman, 600 to 300 BC. I must tell you that these numbers I have taken that which people have accepted, maybe some people will claim something else other thing, there always a variation. Do not go by the numbers. But these are the....But if you today look at, go to that place, find out, is that civilization is dead or it is still there? Those civilizations?

If you look at, there are dead. You do not get any signature from them. But in this country, I am very proud to say that we are having signature of the civilization what was existing during Indus Valley even before. But unfortunately because of cultural invasion today by the market forces in this country without our knowledge, it is being going out at an alarming rate.

So therefore we became also like that maybe 50, within 50 or 100 years. And therefore that is the main motivation for me to take this onerous task of doing this course although I am not a qualified person to do this. So that is the reason I would urge upon people to feel that you are a part of a great civilization which is still living about to die and dedicate your life for keeping it alive and also remove the whatever the destruction it is having and keep the main essence of it and also take forward. So with this, I would like to urge upon you this through this medium so that you can do.

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Ancient Indian Civilization's Gift to the World

A prodigiously creative civilization that had contributed for the welfare of people around the globe (Mesopotamia, Persia, Central Asia, Egypt, Greece, Roman, China, Southeast and Far East Asia, etc)

❖ Spirituality and Religion
❖ Philosophy
❖ Sociology
❖ Education System
❖ Management
❖ Psychology
❖ Language and Scripts
❖ Literature & Art
❖ Agriculture & Textile
❖ Architecture
❖ Mathematics
❖ Astronomy
❖ Medicine
❖ Physics & Metaphysics
❖ Mining & Metallurgy
❖ Chemical Technology
❖ Ship Building

She expands too outside her borders; her ships cross the ocean and the fine superfluity of her wealth brims over to Judea and Egypt and Roman; her colonies spread her arts and epics and creeds in the Archipelago; her traces are found in the sands of Mesopotamia; her religions conquer China and Japan and spread westward as far as Palestine and Alexandria and the figures of the Upanishads and the sayings of the Buddhists are echoed on the lips of Christ. Everywhere as on her soil, so in her works there is teeming of a super-abundant energy of life.

Sri Aurobindo, India

The Hindus have made considerable advances in astronomy, algebra, arithmetic, botany, and medicine, not to mention their superiority in grammar, long before some of these sciences were cultivated by the most ancient nations of Europe. Hence, it has happened that I have been painfully reminded during the progress of this dictionary that a Sanskrit lexicographer ought to aim at a kind of quasi-omniscience.

Sir Monier-Williams, Sanskrit-English Dictionary, 1899

So question arises, what are the speciality of Indian civilization? Why it is so? Can anybody tell me?

Student: Sir, there was so much decentralization of resources at that point of time. So means people do not have to dependent upon , very much upon the administrative bodies.

Professor: Yes. That means the self governance.

Student: Yes.

Professor: They were governed by themselves. It is the society was what you call governing the governance. But today it is other way around. It is the top-down approach. Earlier days, bottom-up approach. Yes, there will be king, there will be administrator but they will not interfere in the day-to-day of....they will not control the life of the people, the freedom. Freedom is the basis of our this thing.

Today, even today also we love freedom. But we are not....we are being chained without our knowledge with market driven materialism and also the the administrators. So if you look at, we are having you know well planned rule in urban areas in the Indus Valley Civilization. Advanced science and technology, that we will be discussing about: What are the technology we are having? How it is higher and scientific language?

I will tell you that our language is very scientific in nature. And we are having plethora of literature, most of them are being destroyed but still we are.....whatever we are having, the level is very high. The level are quite high. And the we are having joint family concept. Even today, although it is being turmoiled or the dwindling but still we believe in the joint family culture which is a very important.

And spiritual practices and Indian philosophy, and love for Mother Nature that is very important. And that is the basis with which ancient Indian science technology were evolved out because we believe that – even if you go to the scripture, you will see, “Jawat tishtati bhumandale saile bankanan taawat tishtati mediniyam santati putra pautri.”

That means it is being told that as long as you take care of the mountains, forest and the gardens and the nature, so long you are taking care of the....not destroying them, live with them, then you will be.....Mother Nature, mediniyam, this earth Mother Nature will be taking care of you, not only you but also your next generations.

So that is the thing what we need to. But today modern science is against the Mother Nature, so that I will be talking about it. So it is very important that today. Even even it is there in your heart, we are not against the nature because it is my mother. So can a son or daughter will go against the mother? No. So therefore that ethos is very important.

And unity in diversity, you may find that several languages, several kinds of people, the several cultures are together but they are being bounded by the one thread that is humanity what I call spirituality. So balance in life is important. It is not that you will run after the money, you will have to run after the power. It is the balance which is important.

So also the searching for the ultimate truth because our scripture says that ‘brahmam satyam jagat sfoorti jeevanam satya shodhanam’. That means if I look at ‘brahma’ which is the ultimate thing that is brahmam satyam, that is truth. And jagat, whatever the going on, it is all dynamics in actions, sfoorti, in action. You always will have to do something you know like it is not that you will be sitting idle and doing nothing, taking the food that what we do nowadays, not doing anything, right?

So this is sfoorti. And jeevanam satya shodhan that means you are here to search the truth that is the ultimate truth. And that is the basis by which science and technology being done in search of truth. So truth is important. Therefore that has to be done and that is our ancestor has talked about it.

So it is if you look at the Vincent Arthur Smith, a historian from 1848 to 1920, he has given his view on India: India beyond all doubt possesses a deep underlying fundamental unity far more profound than that produced either by geographical isolation or by by political superiority. That unity transcends the innumerable diversities. We are having diversities in this country of blood, color, language, dress, manners and sects but still we are united.

That is the thing that is unity in diversity. And let me tell you India is not a country, it is a continent having so many climates, so many what you call languages, so many what you call biodiversities. India is not a country, it is a continent, is a subcontinent we call it, right? It is not a continent rather it is a subcontinent. So therefore having a lot of capabilities and let me just tell you that how do you call like I mean basically what is the gift, India's civilization gift to the world.

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View of Few Scholars

Civilizations have arisen in other parts of the world. In ancient and modern times, wonderful ideas have been carried forward from one race to another...But mark you, my friends, it has been always with the blast of war trumpets and the march of embattled cohorts. Each idea had to be soaked in a deluge of blood.... Each word of power had to be followed by the groans of millions, by the wails of orphans, by the tears of widows. This, many other nations have taught; but India for thousands of years peacefully existed. Here activity prevailed when even Greece did not exist... Even earlier, when history has no record, and tradition dares not peer into the gloom of that intense past, even from until now, ideas after ideas have marched out from her, but every word has been spoken with a blessing behind it and peace before it. We, of all nations of the world, have never been a conquering race, and that blessing is on our head, and therefore we live....!

Swami Vivekananda

So it is a prodigious lucrative civilization. Now people are very creative because they were having freedom. When their freedom, there is a food, they will be creative by default. As I told

man is a creative, curious and creative creature by nature, we are spoiling them in the name of education.

And that had contributed, that is this civilization had contributed for the welfare of the people around the globe. It is not only for us, it is across the globe. We are having interaction with Mesopotamia, Persia, Central Asia, Egypt, Greek, Roman, China, Southeast Far East Asia and several other countries. We do learn from them. It is not that we only give because it is exchange for kind of things.

And we have also looked at not copy and paste, the way we are doing today. We understand and then do because our Veda says, “Learn from everywhere wherever it goes but you must understand and integrate with your cultural values, with your heritage and then adopt it as emulative not just to swallow it because otherwise it will be indigestible (())(21:51).” That is the thing what is happening today. So therefore be careful. I am not saying that learn... do not learn from others but learn by properly understanding how it will be useful to you and other thing. And that is the what our civilization has done.

Sri Aurobindo says, Sri Aurobindo you people might be knowing who had lived in Pondicherry, contributed lot of thing to the modern philosophy of India and spirituality, “And she expands... she means is Mother India, expands too outside her brothers, her ships cross the ocean and the fine (spiri) superfluity... superfluity means basically excess of her wealth because India was a wealthy country. That is why lot of were coming to this to take that wealth and enjoy that. And brims over to Judea, people were calling it as basically ‘sone ka chidiya’, that means it is a country where you can get gold, right?”

“So therefore her colonies spread her arts and epics and creeds in archipelago; her traces are found in the sands of Mesopotamia; her religions conquer the China and Japan, spread the westward as well as Palestine. They conquer them but not sending a single soldier. They are culturally...actually the China and Japan were influenced a lot by Indian culture not by sending by brutal force. That is a very important thing.”

“And spread the westward as far as the Palestine, Alexandria and figures of Upanishads and sayings of Buddhists are echoed on the lips of Christ. Everywhere on her soil, so in her works there is the teeming of superabundant energy of life.” And that energy of life, I could see today

among you. But those energy are not being channelized properly due to bad education, according to me. And once it is channelized, we will be a great country without any doubt and we can give knowledge, we can contribute to the....for the welfare of the world because we believe in Vasudhaiva Kutumbakam, every all are a family. That is the humanity.

So therefore if you look at contribution, we are having a great contribution in spirituality and religion. Philosophy, we are having a six set of philosophies and several others. And sociology, we are having a very good social system. Let me just discuss little bit about it. We are having varnashrama, how many of you are aware? Can you tell me what are those?

Student: Varnashrama ek vyavstha thi. Esmee chaar varnomein baata gaya tha. Means Brahman... It was a system of society in which society was divided in four groups, Brahmin, Kshatriya, Vaishya....

Professor: No, no, that is not Varna. Varnashrama means basically it is what you call the total life span...

Student: Okay, okay.

Professor:person is divided into four parts.

Student: Four parts, okay.

Professor: One is....

Student: Brahmacharya, Grihastha.....

Professor:Brahmacharya okay. One is Brahmacharya, other is Grihastha, the (tha) third is Vanaprastha, the fourth is Sanyasa. So if you look at that Brahmacharya in student life is very important. A person has to develop a firm control over his sense organs, right? Because once you control the sense organs of yours, you will have to learn well because those are the things you need for learning anything new.

And once you do that, then you will go and have a what you call married life and where you will have to also harness those knowledge and sense organs, use them for the propagation of life and also contribute to the society, do a life what you want to and also satisfy your desires and

aspirations. And then after that, you will have to go for a vanaprastha where you will have to detach from this day-to-day life of married life and other things and contribute for the welfare of the society.

And later on, once welfare of the society you do, then you will go for renunciation and you will go for the higher level of thing. So if you look at, basically if I will concentrate on the vanaprastha, vanaprastha is basically a beautiful thing where you will be thinking of your own for doing good to the society. In today if you look at which is the the vanaprastha is generally from the age of something 50 to 75 if you consider 100 years of age of a person which was a very common earlier days.

Even if you consider today, the total maybe around something 20 crore people of this country will be there. If 20 crore people start thinking about the welfare of the society, society will be great. And they are thinking not by the government force, by the government or some other, they are doing from their own self. That is a beautiful system of sociology which is not there anywhere in the world or any other form to best of my knowledge.

If I am...if something is there, I will be very happy to learn because my knowledge is limited, limitation, my knowledge is limited. So therefore that is a beautiful system. There several other systems are there of sociology, people are not looking at it, savvy. Similarly education system, gurukul system were very beautiful system. And we are the first to have a university in the entire world, right?

And that is and management, psychology. Psychology, if you look at Abraham Maslow, he has taken a concept from the Taittiriya Upanishad that is Panchakosha. I do not want to elaborate that. You people should look at it. And this is similar thing. And he became a famous because taking that and not acknowledging that he has taken that from that. And we (pe) poor people, we are not looking at it, right? So that is the thing. I would like to urge you people please look at our own scriptures, use it and even modern time, it can be utilized. That is the objective of this course to make you aware that we are having plethora of the knowledge, informations which (you) can be utilized today.

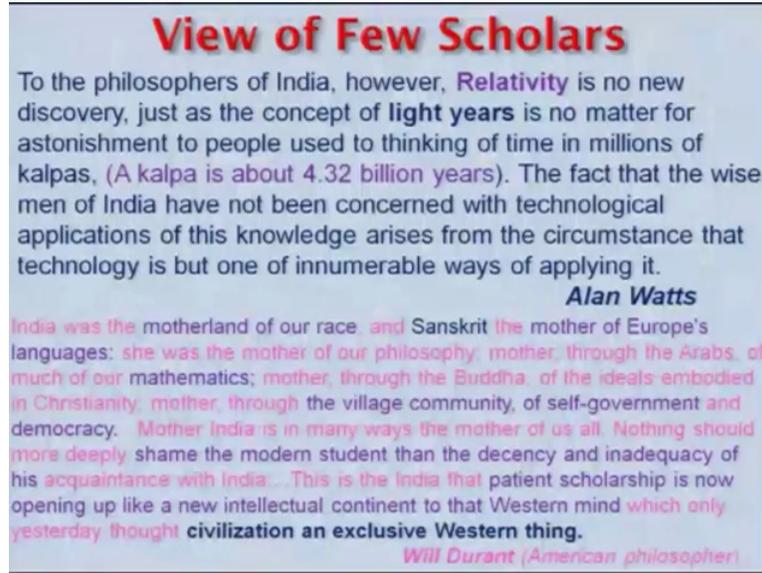
So and we have language is great and scripts also. And literature and arts. Agriculture, we are very good today. Organic farming what you were talking about basically Indian agricultural

methodology has come in the organic farming. Textiles, mathematics, astronomy, medicine, physics and metaphysics, mining and metallurgy, and chemical technology, ship technology, some of these things we will be discussing not all because this is very introductory course.

Let me tell you what this Sir Monier-Williams, the Sanskrit-English Dictionary, who is writing a preface for this, he has written: The Hindus have made considerable advances in astronomy, algebra, arithmetic, botany and medicine, not to mention their superiority in grammar. Grammar is very beautiful grammar system we are having now and long before some of the science were cultivated by most of the ancient nation of Europe. Hence, it has happened that I have been painfully reminded during the progress of this dictionary that is a Sanskrit lexicographer ought to aim at the kind of quasi-omniscience.

It is almost science what they are saying as a grammar, you know that is true. But we are not being taught properly the grammar, the Ashtadhyayi and other thing.

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View of Few Scholars

To the philosophers of India, however, **Relativity** is no new discovery, just as the concept of **light years** is no matter for astonishment to people used to thinking of time in millions of kalpas, (A kalpa is about 4.32 billion years). The fact that the wise men of India have not been concerned with technological applications of this knowledge arises from the circumstance that technology is but one of innumerable ways of applying it.

Alan Watts

India was the motherland of our race, and Sanskrit the mother of Europe's languages: she was the mother of our philosophy; mother, through the Arabs, of much of our mathematics; mother, through the Buddha, of the ideals embodied in Christianity; mother, through the village community, of self-government and democracy. Mother India is in many ways the mother of us all. Nothing should more deeply shame the modern student than the decency and inadequacy of his acquaintance with India. This is the India that patient scholarship is now opening up like a new intellectual continent to that Western mind which only yesterday thought **civilization an exclusive Western thing.**

Will Durant (American philosopher)

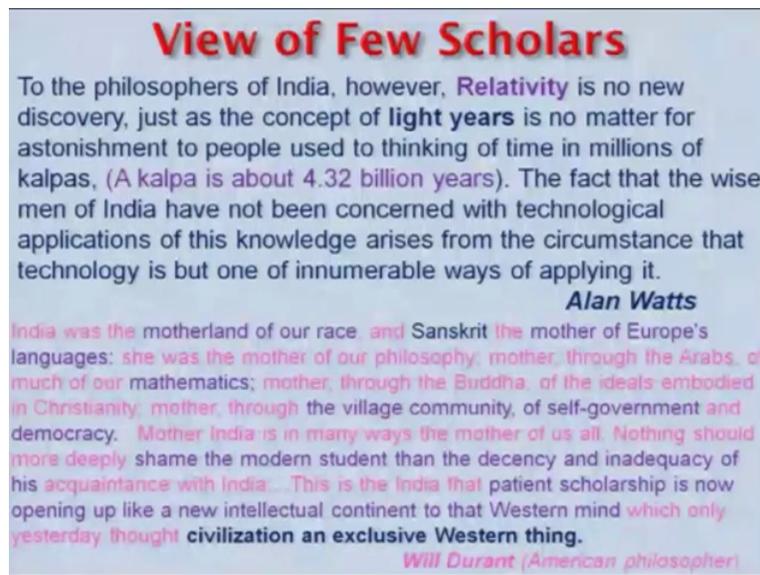
So I will tell you also what Swami Vivekananda has told about our civilization: Civilization have arisen in other parts of the world. In ancient and modern times, wonderful ideas have been carried forward from one race to another. But mark you, my friends, it has been always with the blast of war trumpets and the march of embattled cohorts. You know they have put force

together. You know they used the arms and ammunition to you know place or force the culture, right?

And each idea had to be soaked in the deluge of blood. Each word or power had to be followed by the groans of millions, by the wails of orphans, by the tears of widows. And this, many other nations have taught. Right? These are the things they have taught. But the India for thousands of years peacefully existed. Here the activity prevailed when the Greece did not exist. Even the earlier, when the history has no record and tradition dare not peer...traditions and the tradition dares not peer into the gloom of that intense past, even from until now, ideas after ideas marched out from her, but every word has been spoken with a blessings behind it and peace before it.

We, all of, we of all nations of the world, have never been a conquering race and the blessing is on our head and therefore we live. So we have seen that how Swami Vivekananda has talked about our civilization. What we will see that we will see what Alan Watts has talked about our civilization.

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View of Few Scholars

To the philosophers of India, however, **Relativity** is no new discovery, just as the concept of **light years** is no matter for astonishment to people used to thinking of time in millions of kalpas, (A kalpa is about 4.32 billion years). The fact that the wise men of India have not been concerned with technological applications of this knowledge arises from the circumstance that technology is but one of innumerable ways of applying it.

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Will Durant (American philosopher)

He says that to the philosophers of India, however, Relativity is no new discovery. You know the theory of relativity was you know epoch-making in what you call discovery. But for Indians, it is not because they have lived with that. Just as the concept of light years is no matter for

astonishment to the people used to think of time in millions kalpas. Are you getting? Light years, you know, 3×10^8 meter per second, right? Is it? Am I right? No, no...

Student: Sir, into 360.

Professor: So, all right. But the a kalpa is basically 4.32 billions of years. We cannot think even today. I mean they have thought about what is the kalpa. And the fact that the wise men of India have not been concerned with technological application of this knowledge, they were having knowledge but they did not apply it that way modern people have done. Why? Why it is they did not do that? Can anybody tell me? Think about it, we will discuss.

And arises from the circumstance, the technology is but one innumerable ways of applying it. Let me tell you the technology what we are doing today, we are using technology and then we are not using the mind to develop. Our ancestors were very much keen to develop a mind so that they will conceive the magnanimity of the Brahman. Therefore, the technology is today against us developing the...expanding the horizon of mind. That is why they were not doing that according to my interpretation.

So therefore India, let me just tell a quote from the Will Durant, American philosopher, what he has told: India was the motherland of our race, the Sanskrit the mother of Europe's languages. The Sanskrit also is the mother of almost all languages in this country and is having a very good you know grammar that is known as Ashtadhyayi. Let me tell you that today we do not have people who really having a good knowledge out of 130 crore (who) in Ashtadhyayi.

It is such a bad situation today and without which we cannot understand Vedas. We cannot understand lot of scriptures without knowing the grammar properly. So she was, she was means Mother India, was the mother of our philosophy. Mother means creator. The mother, through the Arabs, of much of our mathematics. That means through the Arab, this mathematics which is originated in India went to the European countries.

Mother through the Buddha of the ideals embodied in Christianity, mother through the village community. We are having a community living and western people are adopting but we are living it, right? And of the self-government, self-governance is the part and parcel of our ancestors and

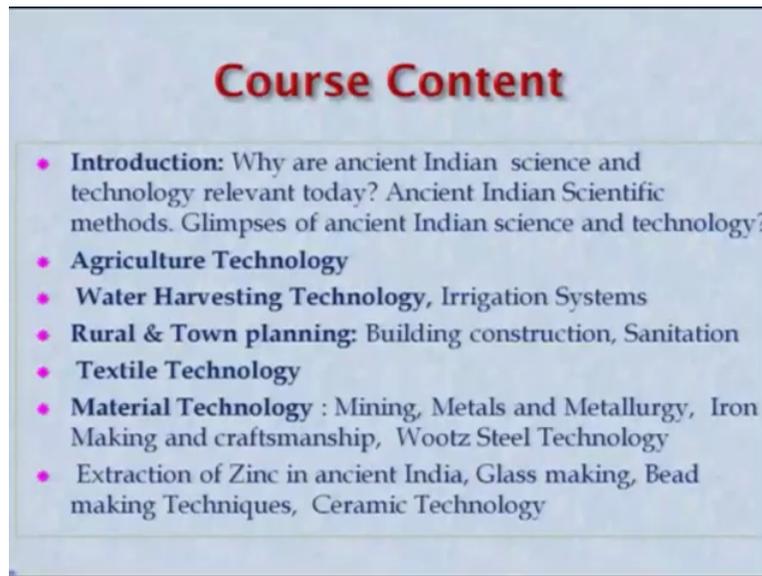
the democracy. The Mother India is many ways the mother of us all. He says that, Will Durant, the American philosopher.

And nothing that, not only this but he says nothing should be more deeply shame the modern student, modern student of America, okay, than the decency of, inadequacy of his acquaintance with India. If look at, he asking that you are not acquainted with the Indian knowledge or Indian culture and heritage, you should feel ashamed. But how many of you have.....are aware of Indian philosophy today? That is the....we should feel more ashamed than the Americans.

He should be aware and that is the objective with which I am doing this course for you people and taking lot of pain. I wish that you should work hard and do contribute for the...in propagation of this knowledge and also do research on that. So this is the India that patient scholarship, scholarship cannot be get in a hurry the way we live a life in today all busy for nothing. So the patient scholarship is now opening up like a new intellectual continent to the Western mind which only yesterday thought civilization an exclusive Western thing.

Because before the excavation of this Indus Valley Civilization in Harappan region, people were not knowing India was having anything but later on people have found that we are having plethora of it. So that idea has been gone but it is still in our mind that we are having nothing. We are having lot of thing and we are also today having energetic and what you call intelligence mind, (intelle) intellectual mind that will be. So with this, I will tell you that what will be the course content.

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I will start, give introduction: Why our ancient Indian science and technology relevant today? And we will be discussing about ancient Indian scientific methods being adopted to harness the science and technology, glimpses of ancient Indian science and technology I will be talking about.

Later on, I will be moving about agriculture technology being adopted now which is coming to our country as a organic farming. That is the same thing, old wine in new bottle and it is coming to us. And our what you call food being more costlier because you know the technology has come from outside but it is our own technology.

So water harvesting technology and irrigation systems which is a very beautiful. It is far superior than the what we are adopting from the western people. Rural and town planning, which is also equally good. Building construction, sanitation and I will tell you how we can reduce the cost, how we can adopt those technology even today and which will be more environmental benign. And also the cost-effective (techni) textile technology.

And I will be discussing our material technology, various aspect, mining, metals, metallurgy, iron making, craftsmanship means basically. And wootz steel which was a very important one, I will be talking about that.

Extraction of zinc in ancient India, glass making, bead making (taken) and ceramic technology and some other things also depending on the time, I will be trying to cover. With this, I will end this lecture saying that we know that what is the India, what is the ancient civilization, how great were our ancestors were and what they contributed and what is the philosophy behind that.

So I have tried to give you glimpses of that but however you will have to read, study and do that. And I, in the next lecture, I will be giving you some reference to study that so that you can look at some differences. And as I go along, I will be talking about the references which you can look for you know knowing more about this course. Thank you very much.