

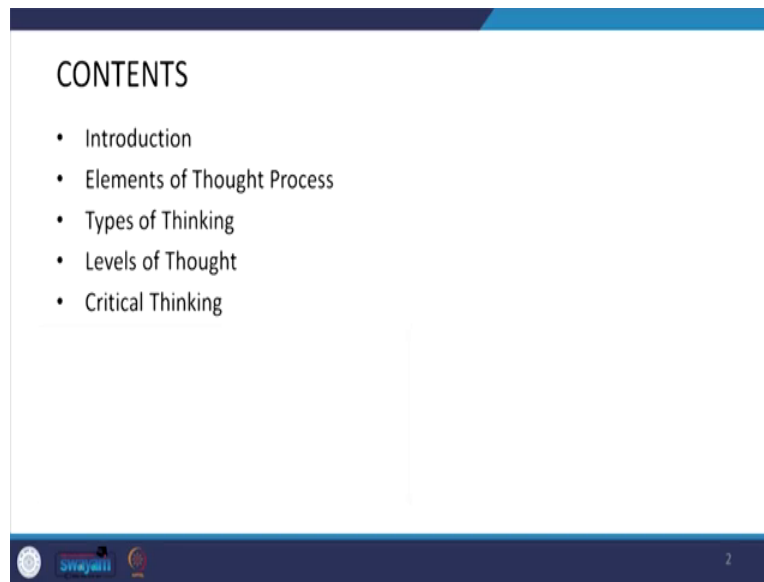
Managerial Skills for Interpersonal Dynamics
Professor Santosh Rangnekar
Department of Management Studies
Indian Institute of Technology, Roorkee
Lecture - 48
Thinking Process

In this session I will talk about a very-very important concept that is The Thinking Process. Actually in our lives what we do that we are driven by our thought process but why some people are having the high order of thinking, some people are having the moderate order of thinking, some people are having the low order of thinking? And therefore, you will find that is the we encourage, the teachers encouraged in the classroom to understand the concept first and therefore understanding and the reproducing and that is called about the recall.

So, when you are only reproducing then definitely in that case it is the low order of thinking but whatever you have studied and you are making the practical implication of that particular study then that is the moderate level of thinking, whatever you are studying and then you add by interpretation your experiences into that and you build and create a new structure and that is called the high order of thinking.

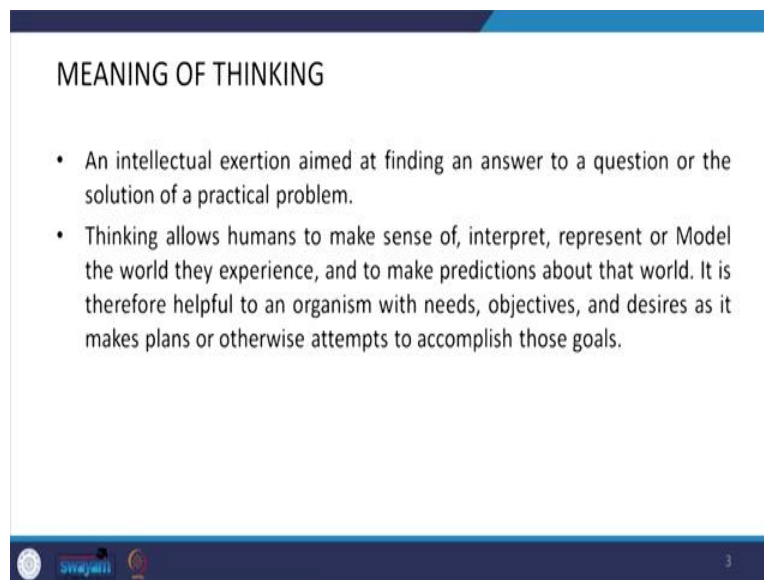
So, if we just do whatever has been told to do then definitely it is the lower order of thinking but we do in a better way then definitely moderate but we do and we incorporate our experiences that what problems I have come across and therefore, when we say experienced person, experienced persons is must because he guides you, he protects you, prevents you, he helps you, he facilitates you, he leader, he leads you. So, because now he puts his experience in that and therefore, that becomes the high level order of thinking is there.

(Refer Slide Time: 3:03)



So, one should try to be the high order of thinker and then what is this thinking process, how it works that I will be discussing with you that is what are the different elements of thought processes, what are the different types of thinking, levels of thought, critical thinking that I will discuss with you.

(Refer Slide Time: 3:20)



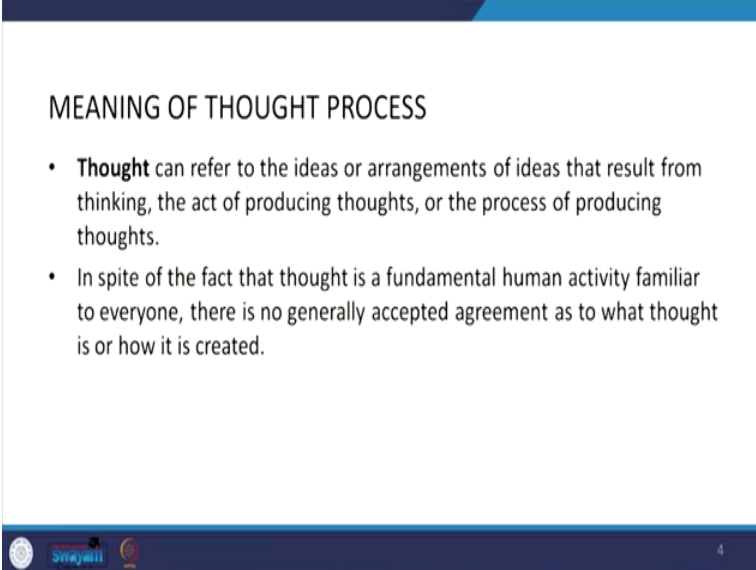
An intellectual exertion aimed at finding an answer to a question or the solution of a practical problem. So, therefore, always an intellectual person what he does? He always finds the

solutions to the problems and there if the person is not a good thinker, what he will do? He will create the problem into the more problems.

So, therefore, in that case under the thought process, thinking allows humans to make sense of about a particular situation, interpret and represent or model the world the experience this I mentioned earlier. So, you create a model on the basis of your experience. So, therefore, you are not only doing the research, you are not only the just interpret and sense but rather than interpret and sense and then discuss and propose a model.

So, therefore, to make predictions about that world. It is therefore helpful to an organism with needs objectives and desires as it makes plans or otherwise attempt to accomplish those goals and for those accomplishment of those goals will be through the high order of thinking.

(Refer Slide Time: 4:29)



The slide is titled "MEANING OF THOUGHT PROCESS" and contains two bullet points. The first bullet point states that "Thought" can refer to ideas or arrangements of ideas resulting from thinking, the act of producing thoughts, or the process of producing thoughts. The second bullet point notes that despite thought being a fundamental human activity familiar to everyone, there is no generally accepted agreement on what thought is or how it is created. The slide also features a "Swayam" logo and a small number "4" in the bottom right corner.

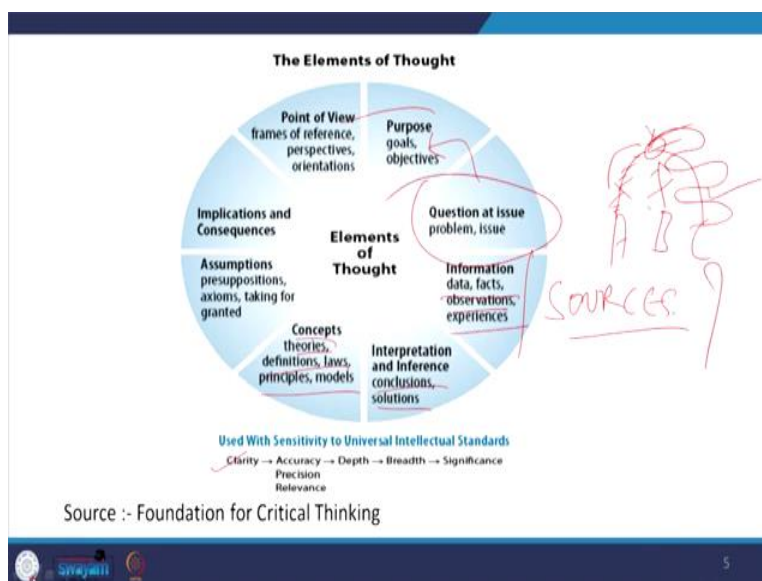
So, how the thought comes? The thought can refer to the ideas or arrangement of ideas that results from the thinking. The act of producing thoughts or the process of producing the thoughts are there. So, therefore, in that case there are the number of ideas and those ideas they are converted into a thought.

For example, the product development. So, new product development that will be an idea, the number of ideas will come and out of those ideas you will select and then you will come out with the new product idea and that new product idea that will create an innovation. In spite of the fact

that thought is a fundamental human activity familiar to everyone there is no generally accepted agreement as to what thought is or how it is created.

So, therefore, many thoughts are keep on coming in your mind but are we converting into those thoughts, into the realistic any outcome and therefore, very few people know about it is the how I can convert that thought into the reality.

(Refer Slide Time: 5:42)



Now, in these foundations of the critical thinking the elements of thoughts are the point of view frames of the reference, perspectives and orientations that becomes very much important is the. So, what is your point of view is there? And the point of view it depends on the what type of the references or the perspectives you are having.

Similarly, the purpose that is the goals and objectives, what type of the goals and objectives you are having? So, what you want to achieve? So, your thought process, actually suppose you want to go a particular place, what will be the first thought? First thought will be how I will reach there, what are the different mode of transportations?

Which transportation mode will be better one? Whether it will be possible to get it mode of transportation or not? You want to make a long journey, you think of a transportation, you think of a railway, but if you may get the reservation you may not get the reservation, then what is

alternative? And what type of road transportation or the air transportation, which you will prefer and why?

So, everything thought process will come in your mind and therefore, there will be the questions and issues into your place. So, these questions are issues that will lead you that is the how in these questions or issues the problems that will be there, how I can go there, this is the path, this is the journey, that is a destination and therefore, about these goals or objectives or destination, how I will reach there and to reach there, there will be the certain problems or issues and these problems or issues that will be going to the achieving that particular goals.

And these, these the, so many issues should come in your mind, if you are a critical thinker that I will come later on. So, therefore, for that purposes what you will do? You will collect the information, if I want to reach there, then you will collect the data, facts, you will ask your friend had you been there, do you know how to reach there, which is the best mode of transport?

And therefore, you will collect the data, you will collect the facts, you will have the observations and the experiences. So, therefore, in that case you will like to get the experiences from others, you will go for the observations and during those observations you will go for these either through the, with the use of technology.

So, with the use of technology you will collect a particular information. So, suppose you are having the multiple informations, so what you will do? You will interpret them and inference them and that that is the okay if I adopt the path A to reach this particular journey and then in that case how I will go, if I go by the path B that is the another mode of journey, transportation or if I go by C that is another mode of transportation.

Now these are the barriers, these are the resources, these are the convenience, the comforts and then these are the discomforts will be there in my journey. So, therefore, in that case then you will interpret, you will interpret that is how I can overcome this type of the these pits, pits in the path that is the barriers in the path and then when you will make the conclusion in finally solutions.

So, you will say no, not A, not B, but yes, C is okay. So, therefore, in that case it is about the individual, that is the how the individual is getting that particular interpretation and inference.

Now, if you see this particular process up to here, point of view, the purpose and goal, the questions and issues, information and interpretation, what do you think, how it will differentiate the level of thinking?

The first and foremost that is the point of view, that is to go there, to reach there and decide a destination, framing a goal, purpose whether it is the appropriate or not, otherwise you may decide under vision, you may decide over vision goals and therefore, means with your high capabilities you are deciding the low order goal, with your the low capacities you are deciding the very high level of goal which you may not achieve and therefore, in that case it becomes the element of thought that should balance, for this balance you collect the information.

Now, from whom, from where and what and when you are collecting this information? Because when you are talking about the data and facts, observations and experiences, these will be through the resources, sources or certain sources, what are these sources and whether these sources are authenticate or not, whether these sources are the genuine or not, whether these sources are enough or not?

So, therefore, in that case that is becoming a very-very differentiating the level of thinking because you are able to connect the genuine sources, you are able to connect with the genuine people, you are able to connect to collect the facts from the genuine source of the information. So, therefore, in that case it becomes the, you will not believe just any person who is not having experience.

So you will talk to an experienced person and therefore, if a person approaches to whom who is having the less experience or no experience and a person to achieve this purpose or goal approaches to a person who is having the very relevant and high level of experience, naturally this this particular taught process to approach B as compared to approach A is the more wisely decision.

And therefore, to achieve this particular decision that the thinking process will work, because your thinking process that is you do not have courage to meet the more experienced person, then definitely in that case you will approach to the less experienced person and your level of thinking will be up to that level only. Because less experienced person will not be able to solve those

problems, which the high experienced person will be able to solve those problems, because he might have come across those particular problems.

So that is a relevance basically relevant experience. So, therefore, in that case it is the when you are making the interpretation it has been seen what was your methodology? What was your approach? From where you have collected the information, what information and how do you interpret those informations? On basis of this information and the interpretation when you decided to go to a particular goal with through a particular mode of transport, what you do?

You develop the concept, theories and definitions, laws, principle and models. So, next time if somebody ask you, you tell him that is “Ok, you go by C, you will get these problems and you will reach there.” So, this designing and sharing of experience is nothing but a model that is whenever you want to go a particular place, you go through this particular situation. And therefore, in that case you will be able to achieve that particular goal.

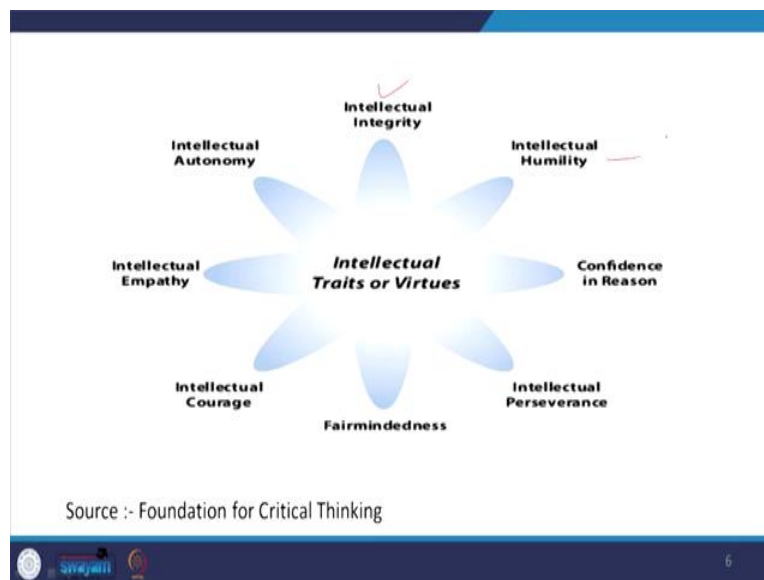
There will be the assumptions, presuppositions, axioms taking for granted and naturally for this particular relevant thought that you have to make certain assumptions that, yes vehicle will be available, vehicle will reach in time, there will be no accidents and therefore, such assumptions and presuppositions that will making you that, yes, this is possible to reach because you are making a proper assumptions are there.

As soon as you propose this model making the assumptions, there will be the implications and the consequences will be there. And therefore, in that case you will be able to reach your destination with the proper thought process. So, for the proper thought process what is required? You have the clarity, here you will find, then the accuracy, precision relevance, then the depth and breadth in your thought process and then significance that is very-very important.

So, in the foundation of critical thinking have a proper point of view, clear goal, have the questions how to achieve these goals, collect the information, interpret, design a model, making certain assumptions please ensure that these assumptions are met, because if these assumptions are not met then there will be threat, you may not able to achieve the goal and then there will be the implications and consequences and this will create a foundation of a critical thinking.

Because when you are having the foundation of critical thinking then in that, only in that case you will be having this particular process, full process and which will be having the full proof to reach your destination with the minimum problems. Because there might be certain unseen problems always there but those problems will be minimum, 10 percent will be problems but 90 percent you have already talked to the experienced persons, your goal is clear, your questions and issues have been resolved, your interpretation is the very basic and realistic, your assumptions are already considered, so definitely there will be the less problem in you achieving the goal.

(Refer Slide Time: 16:39)



So, here when we talk about this developing the intellectual capital, why some organizations they are becoming more successful? Because the people who are working in that organization they are having the high level of the integrity and the high level of integrity, they are having that is called the intellectual integrity. Intellectual integrity means that is a thought process in the design.

Now, here you may ask that does it depend on the heredity? Not necessary, it depends on the heredity but not fully, it depends on the heredity, environment and situation. So, a person who may not be hereditary very high intellectual but with the help of the environment, he can develop that intellectual integrity. So, intellectual integrity can be developed when you are working in a particular environment.

There is the intellectual humility is there. So, therefore, you will have that intellectual humility and then in that intellectual humility you will be able to perform. Then the confidence in reason. Whatever the path you have decided, there are enough logics you have used. So, therefore, you have the confidence, you have intellectual perseverance. So, for doing this naturally the perseverance is required and one will be able to go through this particular process of the intellectual perseverance.

Then the fairmindedness is always required because you cannot be biased, if you are biased, you will not be able to go with this particular process. Then you will be getting diverted but when you are having the intellectual integrity so your approach is very-very honest approach and when honest approach is there, there is no need for these particular conditions and therefore, in that case there will be the fairmindedness and no biasness is there.

When there will be intellectual courage to take risk as I mentioned in the new product development, why some companies are able to come out with the new product development? Because they are having intellectual courage which is very-very important. Intellectual courage giving you that is the, I can take the risk.

And there is an intellectual empathy of the intellectual empathy will be that is whenever there will be the problems, there is somebody mentally that is no you are doing good you go ahead and therefore that we create the intellectual empathy. And then the intellectual autonomy is there.

And in the intellectual autonomy you will find ultimately you are getting there what you want to do, so your thought process is very clear and then you are now starting to achieve your goals because intellectually the whole design, whole model, whole virtues are very clear to you and therefore, there is a clarity of thought.

(Refer Slide Time: 19:56)

INTELLECTUAL STANDARDS TO EVALUATE THINKING

- CLARITY :- Understandable, Meaning can be grasped
- ACCURACY :- Free from Errors and Distortions
- PRECISION :- Exact To the necessary level of details
- RELEVANCE :- Relating to the matter at Hand
- DEPTH :- Containing Complexities & multiple Interrelationships
- BREADTH :- Encompassing multiple viewpoints
- LOGICS :- The parts makes sense together , no contradictions
- SIGNIFICANCE :- Focusing on the important , not trivial
- FAIRNESS :- Justifiable, not self serving or one sided

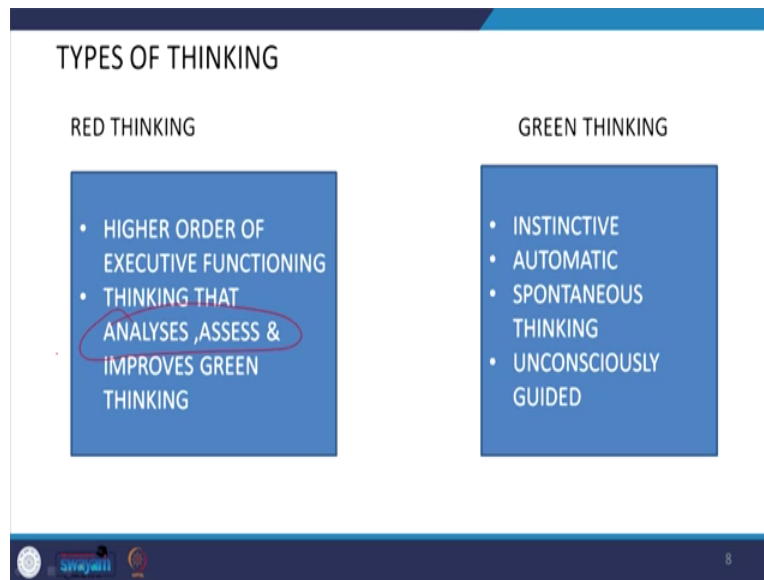
Source :- 2006 Foundation of Critical Thinking

So, when we talk about the clarity, understandable meaning can be grasped. Accuracy, free from errors and distortions is there in your thought process. The precision, exact to the necessary level of details that what you want that is the all details are available. Relevance, relating to the matter at hand and therefore, in that case you will find there is relevance is there. Depth, containing the complexities and multiple in the interrelationships are there and whenever there is a containing the complexities and multiple interrelationships then there will be always depth will be there.

Breadth, that is encompassing the multiple viewpoints and this encompassing multiple viewpoints that will give you this (20:34) of the evolution of thinking. Logics, the parts makes sense together and no contradictions are there and therefore, whatever you are thinking it is logical is there.

Significance, that is the focusing on the important and not trivial. And the finally, the fairness that is a justifiable, not self-servicing or one sided is there. So, these are the standard intellectual standards that is to evaluate the thinking is there and then you can say you are going for the critical thinking.

(Refer Slide Time: 21:17)



So, whenever we are talking about the types of thinking there are two types of thinking, red thinking and the green thinking. The red thinking is the higher order of executive functioning, thinking that analysis, assess and improves the green thinking. While the green thinking is instinctive, automatic, spontaneous thinking, unconsciously guided.

So, when we talk about the red thinking, so it naturally it is giving you a proper approach to solve the particular problem, to achieve the goal. And therefore, what it does? It is making the proper analysis of information, so they convert data, data into information, information into knowledge, knowledge into wisdom and wisdom into truth.

So, therefore, this particular thinking that analysis, assess and improves the green thinking and it will give you, it will give you that is the how you can improve on your green thinking because now you have know the analytical skills, you assess and therefore, you are able to improve the green thinking.

So, green thinking means it is insecurity spontaneous. So, it should not be the spontaneous thinking rather than sometimes it is required but not always, our thought processes should not be like this, that is the okay let the situation come and then I will decide, no, no, it should not be the matter. And therefore, it should be whatever you talk about, you consciously talk about, you are taking consciously decision that particular process.

(Refer Slide Time: 22:44)

GREEN THINKING

- Unconscious Mixture Of High Quality And Low Quality Thinking

Spontaneous	Subconscious	Uncontrolled
Impulsive	Self protecting	Unanalyzed
Reflexive	Self validating	

Includes ideas that are valid, as well as nonsense, confusion, stereotypes, prejudice. The key is that we cannot distinguish the difference between high & low quality thought in green thinking mode.

Green thinking goes without assessing itself.

9

So, in green thinking unconscious mixture of high quality and low quality thinking is there. So, for example, as I mentioned that is a spontaneous is there let the problem come then I will decide, no. In high order of thinking you have analysis and assess. So, here you find that is the analysis is there, an analysis and that assessment is improving the green thinking.

So, therefore, it becomes important that is the, it is not spontaneous, it is not impulsive. So, many times if the unconscious mind that is going through the this type of the spontaneous and impulsive then definitely it will create more focus on the cell protecting rather than what is right and what is wrong.

Self-validating, proving oneself and showing that, yes, I have done this or uncontrolled and unanalyzed which is very dangerous. If your thought process is creating the unanalyzed, then definitely that will be a big problem and then it will not be uncontrollable. Includes ideas, data valid as well as nonsense, confusion and stereotyped prejudice is there.

So, therefore, if there is this kind of the unconscious mixture and low quality thinking is there which will create the nonsense, which will create more confusion and there will be stereotyped behavior and the prejudices will be there. The key is that we cannot distinguish the difference between the high and low quality through a thought in green thinking mode.

And therefore, in that case as soon as you go by the green thinking, you will not be able to differentiate, green thinking goes without assessing itself and that is why the people are talking less about the green thinking.

(Refer Slide Time: 24:39)

RED THINKING

- Red Thinking stops and assesses itself before going forward

Disciplined	Seeks the truth	Self assessing
Critical Thinking	Self correcting	Probing

- Actively work to eliminate Prejudices, Biases, Dysfunctional thinking from our thinking.
- We actively work on our thinking.
- We rigorously apply intellectual standards to our thinking.

10

So, but when we talk about the red thinking, it is a high intellectual order. High intellectual order means it is disciplined, in a proper discipline way you are thinking, you are having the critical thinking. So, you know the pros and cons both, critical thinking means pros and cons both, it is not that only you know about the critical thinking and that is the only the positive aspect of the these situation or the negative aspect of the situation, no, you have critical thinking about the situation that is a positive aspects also and negative aspects also.

Sees the truth, you try to understand what is a reality? Then it is possible, that is a certain decisions are taken which might be wrong, so self-correcting decision. And that the self-assessing, after doing this particular thinking process you will get certain information and now you start self-assessing, whether this is useful for me or not and whether this is the beneficial for me or not?

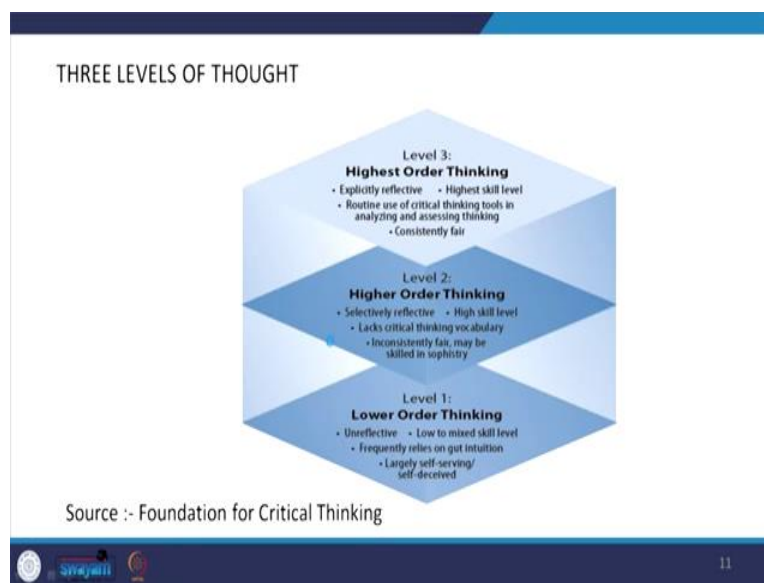
And then especially the probing will there. Actively work to eliminate prejudice, biases, dysfunctional thinking from our thinking and basic purpose of bringing the higher order of

thinking and that is about the removing the biases on the dysfunctional thinking. And there in the red thinking we actually work on our thinking.

So, therefore, it is not just thought came and then we forget, our thought is in the mind but no action is there no, no we actively work on our thinking. And therefore, in that case that will having the actively feeling on this particular thinking. We rigorously apply intellectual standards to our thinking. And therefore, it becomes very very important that is the, we are applying the intellectual standards in our thinking.

So, our thought process, high order of thinking that will be possible when we are discipline and we are having the critical thinking, we seeks the truth and self-correcting, self-assessing and probing is there.

(Refer Slide Time: 26:40)




GREEN THINKING

- Unconscious Mixture Of High Quality And Low Quality Thinking

Spontaneous	Subconscious	Uncontrolled
Impulsive	Self protecting	Unanalyzed
Reflexive	Self validating	

Includes ideas that are valid, as well as nonsense, confusion, stereotypes, prejudice. The key is that we cannot distinguish the difference between high & low quality thought in green thinking mode.

Green thinking goes without assessing itself.

 9

As I was mentioning about the thinking process. So, there is a low order of thinking, higher-order of thinking and the highest order of thinking is there. What is the low order of thinking? That is the unreflective, low to mix the skill level, frequently relies on our institutions, intuitions, therefore, definitely on the basis of, not on the basis of the truth and facts but frequently based on the intuitions.

Largely self-serving or the self-deceived is there. So, protecting of the self-interest, when we are thinking of our self only then that is a lower order of thinking. So, therefore, when we talk about that is about the in the case self-protecting and self-validating in the green thinking, so this self-protecting and self-validating. So, therefore, in that case it will be lower order of thinking is there.

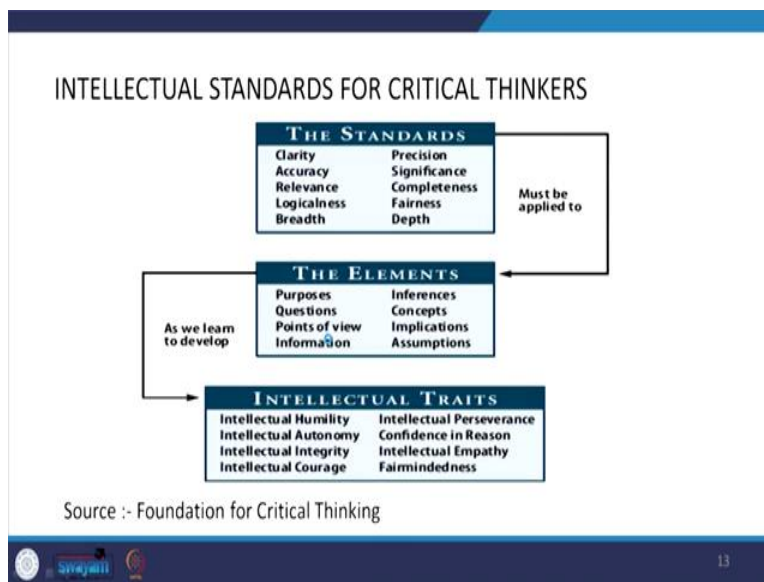
The higher order of thinking is the selectively reflective, and then there selective reflective means? That is what I likes I will say yes, what I do not like I will say no, whether it is the right or wrong. High skills level are required while in the case of the lower order thinking low skills level required. Lags critical thinking vocabulary.

So, therefore, here though it is a higher order of thinking, but lags a critical vocabulary. And then inconsistently fare may be skilled in sophistry. And the higher order of thinking will create that is the always fair will be there, process will be there.

So, when we talk about the highest order of thinking, explicitly reflective. The lower order of thinking, it was unreflective. So, higher order of thinking it is selectively reflective and the highest order of thinking that is the explicitly reflective is there. So, therefore, what we have to encourage? We have to encourage the explicitly reflective.

Then highest skill level is required, here low level, high level and here is the highest level of skills are required. Routine use of critical thinking tools in analyzing in assessing thinking. Now, here role of the analytics become very-very important. A thinker is required to be a good analyst and then if he knows that is the how to do that analysis, he will getting the right results. And finally, consistently fair that is the he will be having this constantly fair is there. So, finally I would like to talk about the intellectual standards for the critical thinkers.

(Refer Slide Time: 29:19)



The intellectual standards are the clarity, accuracy, relevance, logicalness, breadth in the thinking process, precision, significance, completeness, fairness and depth. So, therefore, in that case you will find this is the standards which have been designed by this particular purpose and with the all thought of, these components of these standards then the clarity is there, fairness is there, depth is their, breadth is there in the thought process, then definitely that can be must be applied to the elements.

Elements means as I mentioned earlier the purpose, the purpose what is my goal, why I am doing this, what I am doing this? Then the questions and issues will be raised to achieve that purpose or

goal, then we should have the point of view that I have discussed earlier, information, inferences, concepts, implications and assumptions.

When you are having all these inferences and concepts then definitely in that case then you will be able to apply the standards, if you have the high level of standards, you will be able to apply to the high level of elements, but when you are having the low level of standards, low level means sometimes there is no clarity, sometimes there is no completeness, sometimes there is no logical, sometimes there is no breadth, no depth is there, sometimes there is no precision, then definitely that will be low standard.

But you are putting the high standards, when high standards you are putting to the high elements. So, therefore, in that case that standard, high standard you are using for the purposes. As a result what we can do, as a result we can learn to develop intellectual capital, ability, intellectual traits, and those intellectual traits will be intellectual humility, intellectual autonomy, intellectual integrity, intellectual courage, intellectual perseverance, confidence in reason, intellectual empathy and the fair-mindedness which I had talked about the intellectual structure is there.

So, therefore, in that case, it becomes very-very important that is the when you are, you want to create high order of thinking, you have to focus on that the standards, the elements and creation of intellectual trait. So, that creation of intellectual trait that will depend on what are the elements you are considering, the purpose for which you are working and definitely in that naturally your point of view and then implications of this particular point of view that will decide about that is the how you are having this particular sign of the elements are there.

And believe me when you will having the proper standards and the elements which will be leading you to creation of that intellectual ability. Now, you imagine a family, a group, a society, a nation where intellectual capital is very high. I am sure that is that particular unit where most of the people are of the high order of thinking and they are having the high order of understanding with each other.

Intellectual empathy will be there, then definitely they will be able to have a good relationship because there is no order, low order of thinking because of the biggest threat in the low order of thinking is restricting our thinking process to myself, not to the society, not to my colleagues, not to my subordinates, not to my peers, not to my boss, not to my organization.

So, therefore, when I decide that is I will think about my Institute, I will think about my organization, I will think about my nation, I will think about my society, I will think about my family, I will think about my group, then definitely my elements of thinking, these purposes, the questions, the informations, the assumptions especially that will be totally reframed and when I will reframe so I will go from lower order thinking to higher order thinking and from the higher order of thinking to the highest order of thinking.

I am sure that I have ignite your thinking process, thought process and with these standards and elements by understanding the standards and elements you will be able to create your intellectual traits and more intellectual traits are created this nation will be definitely having the high order of thinkers and high order of thinkers, great successes there, this is all about the thinking process, so I end here, thank you.