

**Concept of Management and Evolution of Management Thought**  
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**Lecture - 38**  
**Creativity and Managing Innovation Process - II**

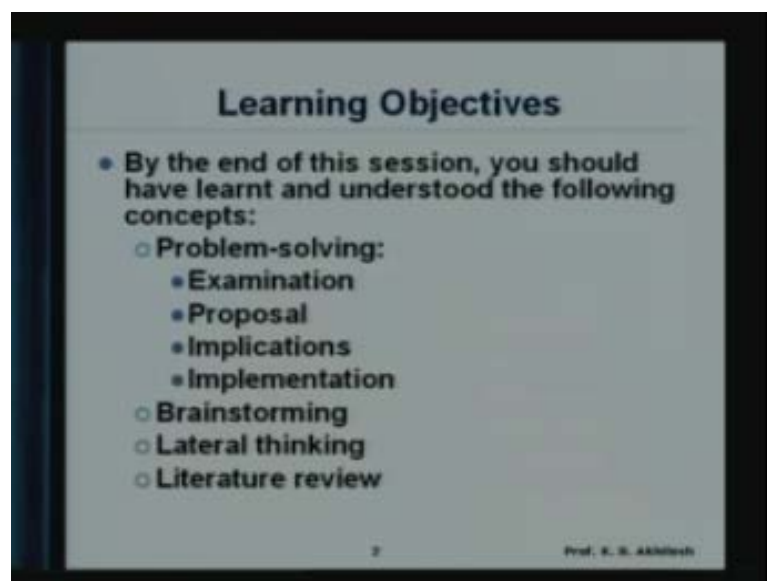
Hello, we have in the past; we have examined number of issues relating to the management and the organization. We have seen different functions of management; we have also seen the organizational theories organization and its subsystems technology people process structure we have also seen what are the different aspects in the environment brings about pressure and create opportunities for the organization and organizational change dimensions. We have also seen organization development as a field of bringing about changes in the organization. Further, we also examined the different dimensions of the group and the group behavior conflict, conflict management and how to resolve conflicts at different levels and we have also seen in the past lecture about the creativity and innovation.

So let us continue our discussion on managing creativity and innovation as we have seen this is one of the important aspect important aspect of the success and unless organizations focus on technology, focus on problem-solving, focus on innovation, focus on bringing about the best of the people through creativity and managing creative individuals, we will not be able to achieve the success, we will not be able to compete in the global markets place. Today organizations are striving to bring this innovation at all levels; Japanese call this as kaizen or what they call it as the continuous improvement.

It is that that we are talking about innovations, we are in the context of the great inventions but we are talking about innovation as workplace improvements, workplace changes, day in and day out whatever we do we need to do things better, we need to do little faster and we should show that yes, always something more can happen. I think this is an attitude and this comes out of a kind of a culture of collaboration where people work together, people understand each other, people appreciate one another and then see the possibilities of doing some new things in that sense one need to take this creativity and innovation together and innovation and creativity has to be managed day in and day out.

So that organization all the time continuously give some new things to the market place improved performance on a daily basis and through that addresses the competition, addresses the opportunities and then exploits whatever of the best of the people in the organization. So let us look at in this lecture what is that we will try and do. So at the end of this session you should have learnt and understood the following the concepts. We will focus on problem-solving, how we can examine the given problem and then how to look at the proposal, how to see the implications and also in terms of the implementation.

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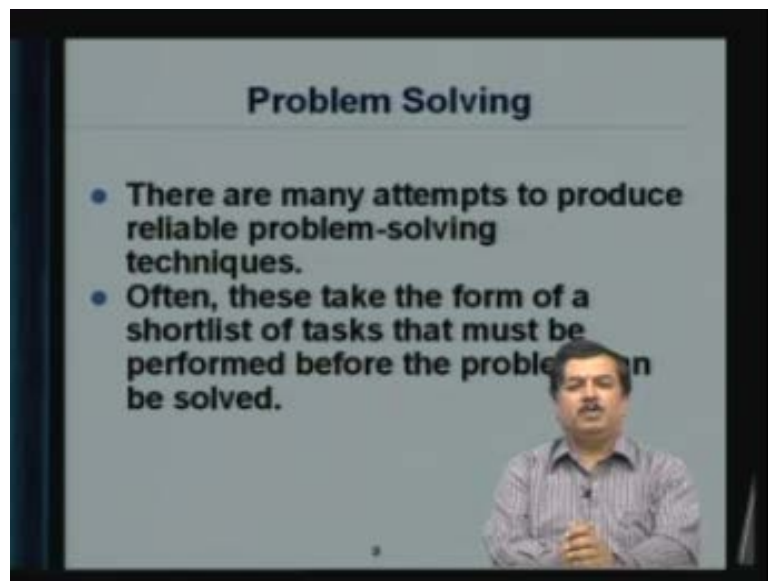


So the problem-solving is one of the widely used technique, we will also look at brainstorming, we will also look at the lateral thinking and finally, we will also see the use this use of this literature review. I could have started with literature review then we could have gone to the lateral thinking or then I could have moved to the brainstorming but none of these things are arranged in any order of merit or order of preference but all of these are available alternatives and these are not any exhaustive listing as well, these are only illustrative examples of how the some of the standard methodologies can be used in the process of innovation, in the process of creativity, in the process of generating new thoughts, new actions in the organization.

Let us look at the problem-solving there are many attempts to produce extremely what could be the best problem-solving technique, simplest of the thing is that you identify the problem

you generate the alternatives then you choose the best of the alternative and then verify the solution and then agree upon an action plan. So often these take the form of a very shortlist of task that must be performed before the problem can be solved. So systematically one need to get into the definition and the view of the problem but in all areas of human endeavor, the problem-solving is the gateway to progress.

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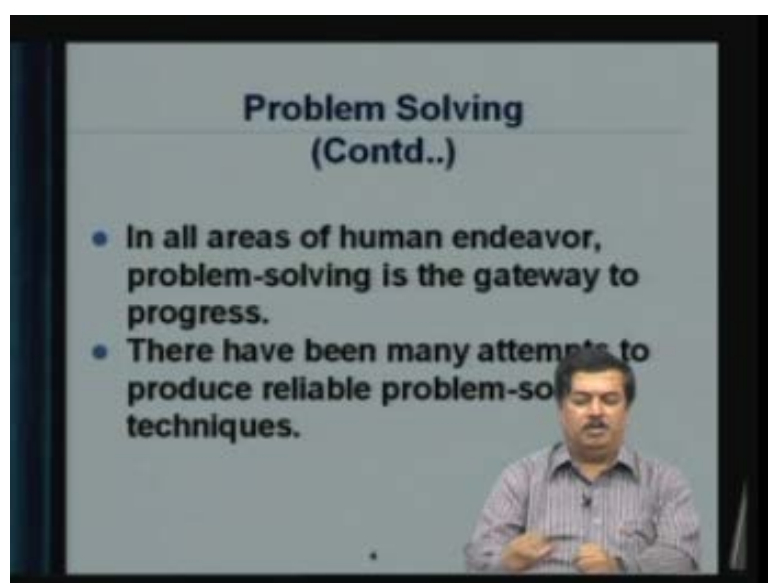


**Problem Solving**

- There are many attempts to produce reliable problem-solving techniques.
- Often, these take the form of a shortlist of tasks that must be performed before the problem can be solved.

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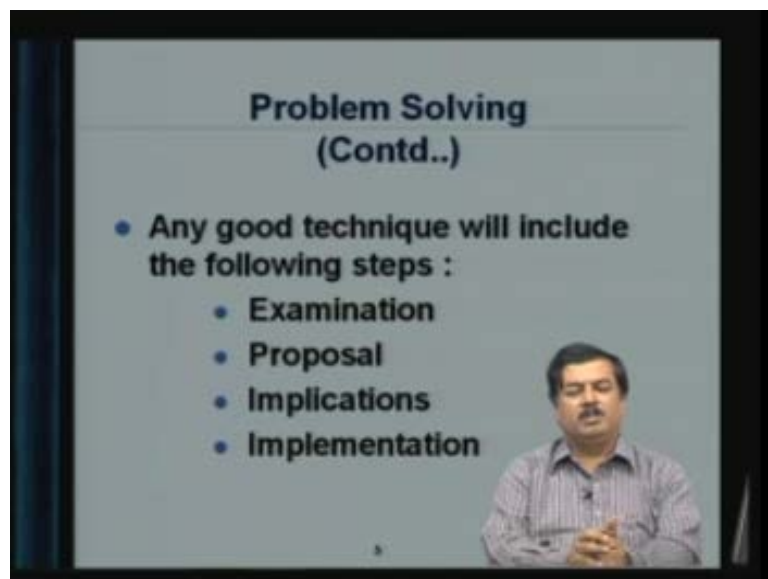
**Problem Solving  
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- In all areas of human endeavor, problem-solving is the gateway to progress.
- There have been many attempts to produce reliable problem-solving techniques.

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So unless you focus on the right problem and focus on the specific methodologies, there is no way we can ensure and guarantee the success. So there have been many attempts to produce the reliable problem-solving techniques and the methodologies at there are many, many methods and people have patented some of these methods people think that is the only method but what we are going to describe is some of the steps what one can follow in getting into the problem-solving mode.

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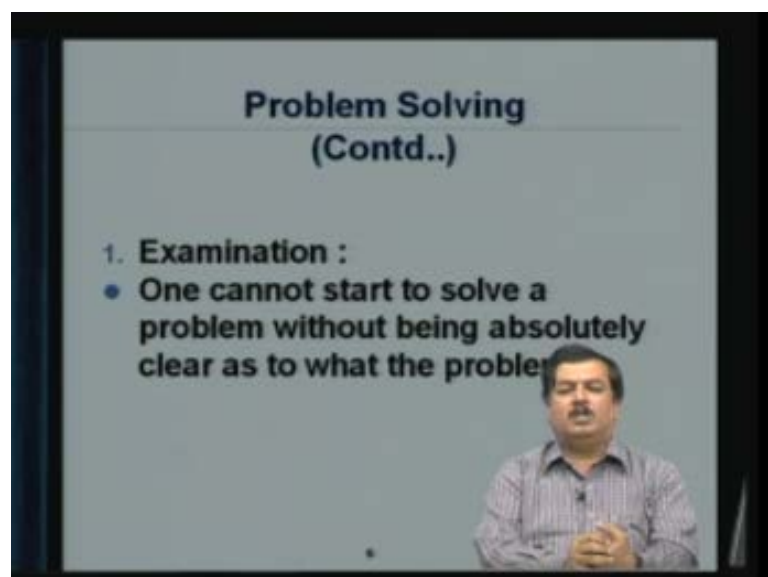


**Problem Solving  
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- Any good technique will include the following steps :
  - Examination
  - Proposal
  - Implications
  - Implementation

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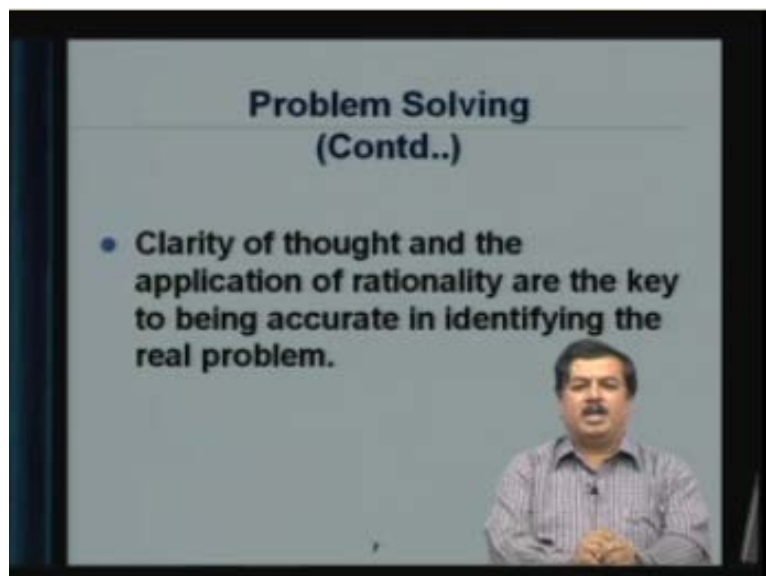
**Problem Solving  
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1. Examination :
  - One cannot start to solve a problem without being absolutely clear as to what the problem is.

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So any good techniques will include the following steps examination, the proposal, the implications and the implementation. So let us look into the first step of this examination. So when you see this examination one cannot start to solve a problem without being absolutely clear as to what is the problem. So what is the problem is it what is that organization, it is individual, is it technology, is it. So one need to see and the you know once you define the problem then all the alternatives and choosing an alternative and also the implementation becomes more effective if the problem is not well understood then the likely the solutions also will suffer.

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So that is where the clarity of thought and the application of rationality are the key to being accurate in identifying the real problem. So people talk about the you know in a problem-solving situation is what are the causes and what are the symptoms? A symptomatic analysis of the problem is could be one but also one can get into the causes and people also use the word root cause analysis. So there are techniques you can go through, you can write a tree diagram or you can write a fishbone kind of a thing. So those these things will help to clarify what are the causes and what are the problems. So in problem-solving it is essential to see and get that and differentiate between the symptoms and the causes. Look at for example, somebody comes to or goes to the doctor and says that I have the headache, so the doctor who can treat him for at the symptoms level.

So what he can do he can give some painkillers or he can ask you know take some medicines is one method or he may also ask okay, you come back after two days and he may not give any real medicine but he may also give some the you know some something which is nothing to do with you know do not call it as a fresh medicine but you can give a something. So that you can wait for two more days to see whether the symptoms are continuing but if you see the causes he will ask some questions.

So did you eat too much yesterday, did you sleep well, in which side did you sleep, what is your age, what is your history of this sleep, so that he can understand this headache ,he can also see the blood pressure, he can see are there any is there any history of this or do you get only headache as you get up from your bed or when you have to go for an examination do you get this headache or you when you have when you see some people do you get headache. So as you start seeing the same headache which could be you know once you start seeing the problem then gets defined more clearly.

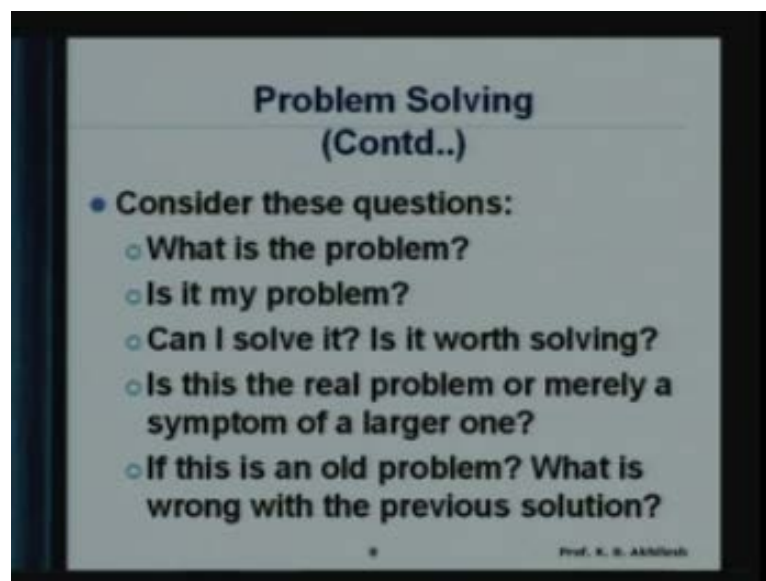
So something may be age linked, sometimes it is the as well as you see some person it could be the situation or as he see some or faces some kind of an excitements. So the headache could be due to many reasons and so the details of that is a kind of a cause effect and once you identify that what could be the major reasons and then the problem becomes much more clearer and then taking views around that probably would help organizations to do things better. Similarly, when you look at in the organization there are absenteeism.

So when absenteeism then one need to see as you start probing why this absenteeism, absenteeism itself could be treated as one level of the problem but then when you start seeing you know absenteeism is happening not across the organization but only in such departments where there are some continuous shift working. So when you start seeing continuous shift working, what is happening there? So one shift of people work that is you know they work for 8 days but then sorry 8 hours and then when they continue for the next one. So if that other person is not there they get premium wages, so that means they get overtime or they double the wages.

So then you will see why some reasons of absenteeism in this particular group because when somebody absents the other person gets the double the wages. So then the next time the other fellow is absent this fellow gets a double the wages. So some understanding of that nature,

so now you start seeing what is the kind of group working what is going on here. So then you will get that kind of a pattern once you know the problem absenteeism is not the problem but the kind of incentives you have provided there the premium rates you have provided and the necessity of the task to continue the shift all through the 24 hours could provide that kind of an opportunity and then you can break it through simple solutions once you know the problem then you can provide an appropriate solution.

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So the problem-solving demands that getting into the details getting into the so that is where the kind of questions many of these questions have been tested out and seen very very relevant, it could be asking these questions either in sequence or in a random manner and when set of people address these things then they may do a better job. So always ask these questions look at the questions one-by-one asking what is the problem, so the so end of the thing is that you may not accept but still you are asking what is the problem.

So asking two three times and then next question you can also ask is it my problem or is it someone else's problem and then can I solve it and then you one can also say is it worth solving, why should we be in a hurry to solve this. So do you pay anything for it or are we are we wasting any resources around it, so if we if we can wait then you know whether it will time will heal. So many of these is it worth solving and we can also see is this the real problem or merely a symptom of a larger problem.

So that means when you see the absenteeism I think it is not that you may see it no, no it is a problem of this particular region itself. So one of the managers describe that the people coming late could be a kind of an attitude of what he called as an “Aram culture” where people are relaxing all the time in the morning. So they are they are very punctual but everyday they come late by 2 hours. So somebody comes at everyday two hours but very punctual because that particular time only he will come. So it one can see what is that then the problem is so is then you know one would have found that kind of an attitude yes anyway I am staying late. So, what is the problem if I go if I go at any time?

So that means the individual would have defined look I am working very hard and I am contributing my best I am staying every you know every day beyond the working hours. So the kind of attitude what the individual would have formed what is the problem, what are the problem if I go at or what are the you know if the company starting at 10 o'clock, why not at 12 o'clock if it is starting at 9 why not at 11 because the kind of attitudes and then when you look at their attitudes why this person then you would say no no no I have to everyday because I have to attend some customer calls and this and do not you know I have to travel, so much and then this.

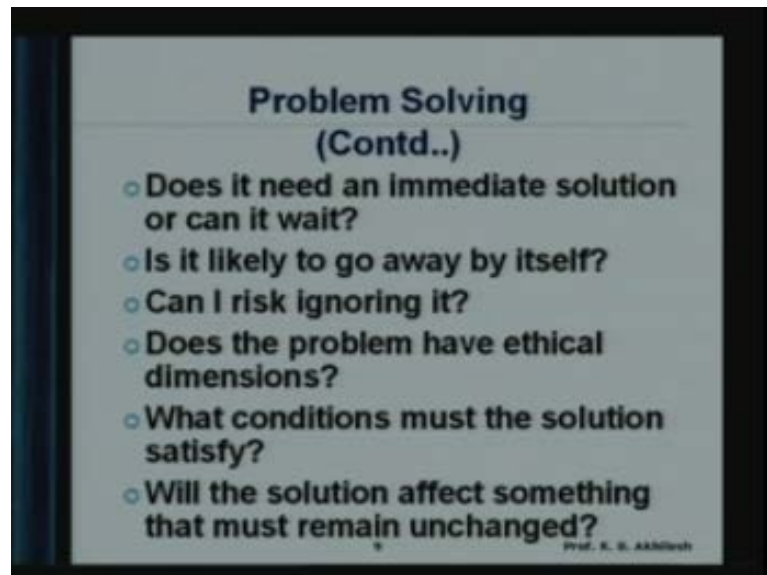
So it is not only the attitude but you will see there is the problem has that the individual spends about two hours of travelling and by the time he reaches home, it is pretty late in the night every day and then coming back would takes as the so much of effort you know then you also see I think he is also working all the 7 days. So that means you know when you start seeing and exploring the problem then you will I think he would understand I think what he is coming late itself is not a problem and he has no attitude in an issue as well but there are real issues is about the logistics and the problem of travelling after the working hours and then getting back to the work next day and you know such things would give the complete prospectives of the problem.

So then you can also ask this question if this is an old problem that means is this a kind of a recurring problem and what is wrong with the previous solution. Now if you are settle this once in for all is it coming back again and again. So that means you will see are the any new workers or is it a kind of every time when we introduce is the you know kind of an appraisal discussion these problems are coming is it true that only some particular time of the year this



issue happens. So what are the last time or what did we do and why some things are happening again?

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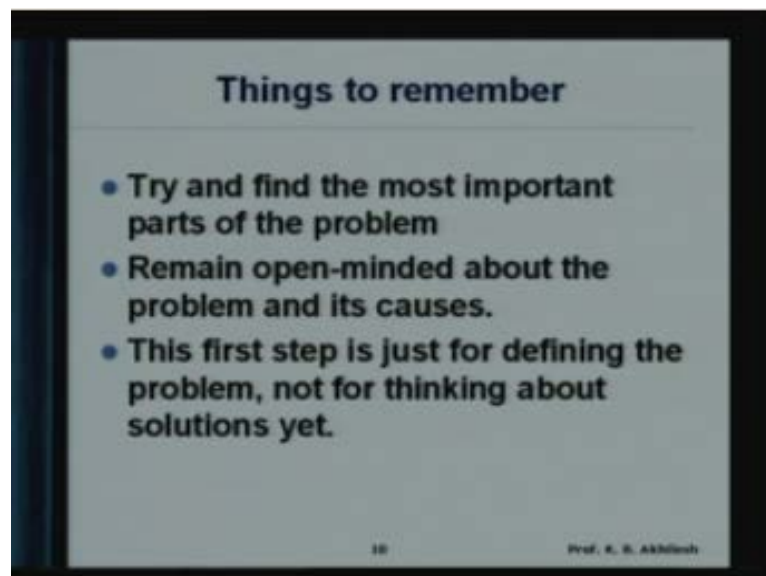


So then you will also see does it need an immediate solution or can it wait, so that means you know you will also know the magnitude of the problem no no no I think it is only problem of few people but even then solutions are being worked out and let us see kind of a thing. So but then that gives an idea no sir it is extremely important fair enough. So then it is likely to go away by itself, so is this the kind of a thing when it has come up because we are under pressure but really that is not the problem. So can I risk ignoring it so that means the whether the color content character of the problem will change if I leave it to the chances.

So that the problem have ethical dimensions, so that means very clearly you need to see whether somebody has violated any values does it provide a kind of a bad president, so the you also try and see the dimension of this problem, what is it like, does it involve some kind of a moral turpitude or it is any you know it has anything to do with the law? So that means you have to take some more factors into consideration. So what conditions must the solution satisfy, so that means an as it to do good to the individual or is it for the group or is it for the organization what is the solution methodology and with a solution affect something that must remain unchanged.

So that means yes, you may have to provide solution but we want that individual to continue in the organization we do not want that individual to go, at the same time you want to shout at the person you want to correct or you want to discipline things like that. So you want to minimize set of consequences or you do not want to alter set of the conditions. So the solution should have to meet with set of criteria of that this must be so when you try and ask many of these questions we have to see that we have to try and find the most important parts of the problem. So that means we have to categorize, we have to systematically analyze and we have to be open-minded about the both the problem as well as its causes.

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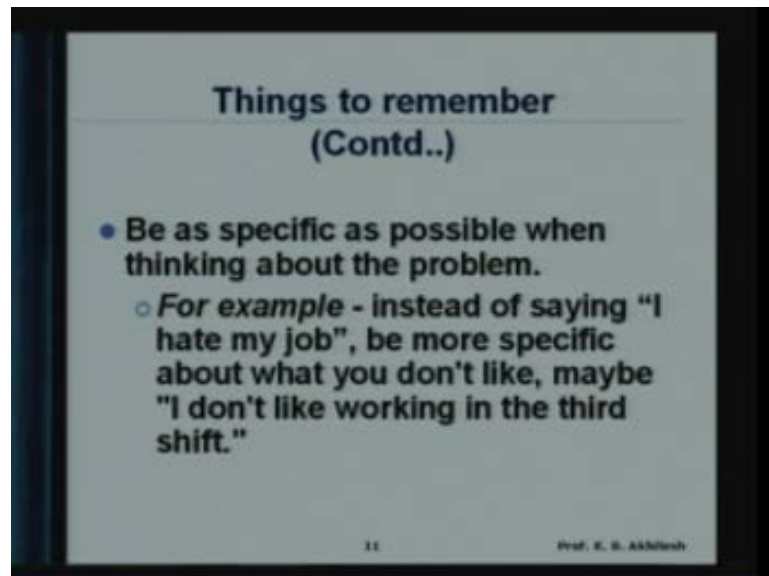


So unless we but if you think no no no no I do not agree with it I do not think this individual has any issues at all or you think known as a very happy person is very comfortable in the life, so making that kind of a of a kind of a judgment is not going to help. So the first step is just to make sure that you are defining the problem and not for thinking about solutions yet. So you have fully focused on the problem, you are fully focused on the different dimensions of the problem without ruling it out that that this may not be a that should not be kind of a thing.

So they avoid that kind of a language of should but etcetera it is also the best is to focus on the specific aspects and be as specific as possible and thinking about the problem to give you an example is that instead of saying I hate my job right, it is a kind of very judgmental but be

more specific about what you do not like I think maybe I do not like working in the third shift, you know the first shift is typically seen as from kind of a 6 to 3.30, the second shift is seen from 3 to 3 to 9, 9.30 and the third shift is seen from 9.30 to early morning that is morning 6 o'clock.

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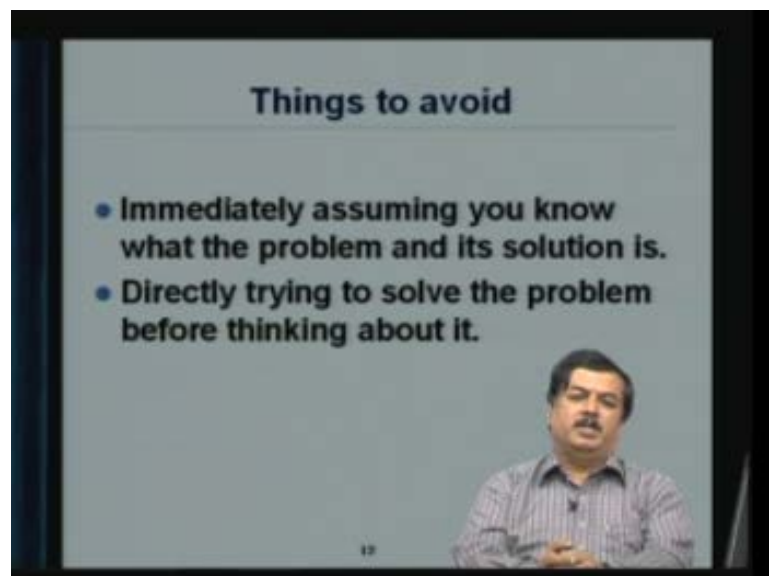


**Things to remember  
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- Be as specific as possible when thinking about the problem.
  - *For example* - instead of saying "I hate my job", be more specific about what you don't like, maybe "I don't like working in the third shift."

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**Things to avoid**

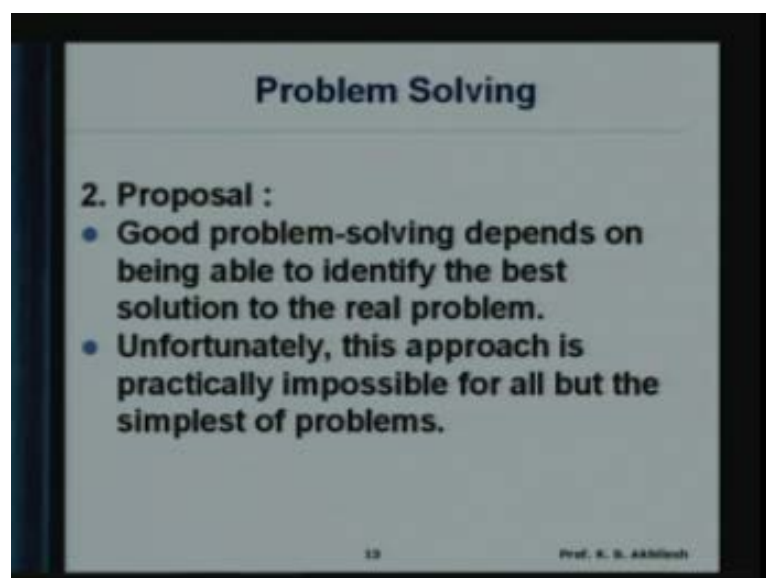
- Immediately assuming you know what the problem and its solution is.
- Directly trying to solve the problem before thinking about it.

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So now many people do not like to work in the night shift so they try to make this as specific as possible then you also should not do the following. So things to avoid is immediately assuming that you know what the problem and also the solution is so there are many people they think okay. So the moment you say no I know this we have seen these people these are all scoundrels, you know the making that kind of a very extreme and judgmental view of the people and then you know I also know how to setraite these people you know when people approach in that fashion they can also commit very serious errors. So understanding why some problem and then also approaching with proper understanding is extremely important, directly trying to solve the problem and before thinking about it. So without thinking if somebody attempts, it is unlikely would read to you know lead to some kind of an improvement and better methodologies.

So look for you know wherever you think of the creativity and problem-solving that one should not be in a hurry, one should not be in a goal for a quick fix kind of a solution but a systematic analysis, systematic documentation and then putting this into order of this cause and effect and then evaluating the alternatives around this cause effect, understanding and really focusing on the causes not on the symptoms is an important discipline and that is what the problem-solving talks about the as the first step but then you move on to the second step is good problem-solving depends upon being able to identify the best solution to the real problem.

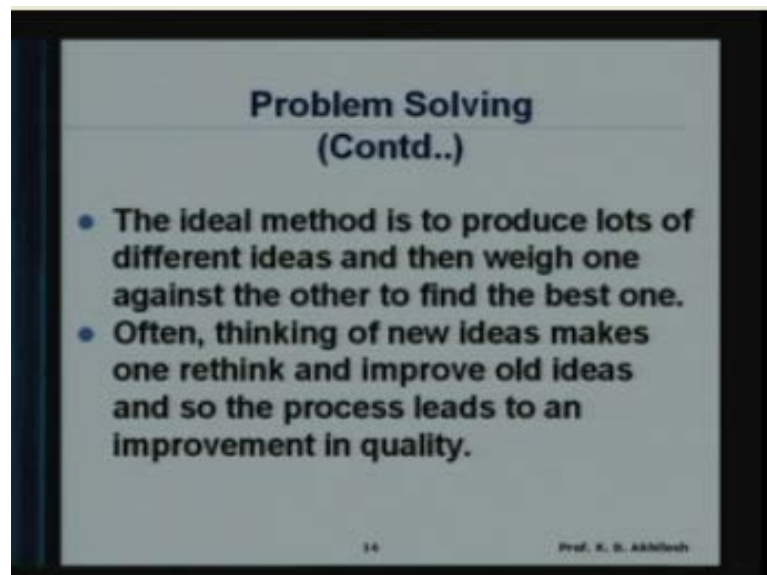
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So that means you have to come up with different alternatives. So having identified the problem then you have to see where the solution could be solution could be in the subsystem level, solution could be at the at that same system level or sometimes it could be at the next super-system level. So the question is where is that the focus should come the focus could come in terms of helping the individuals to look at not only the problem but also about the kind of alternatives available. Unfortunately, this approach is practically impossible for all but the simplest of the problems, you know sometimes it is very easy to look for, they look for the solutions but one has to one is not very clear to see what could be the best.

So the problem-solving depends upon being able to look at the alternatives available and also choosing that kind of a best of the alternatives. So the ideal method is what is to produce tones and tones of ideas about how to go about it, so it may look very irrational some are looks very superficial some looks silly, so some maybe you know repetitive, some may think obvious. So that could be many of these things will come when you are talking about so the solutions.

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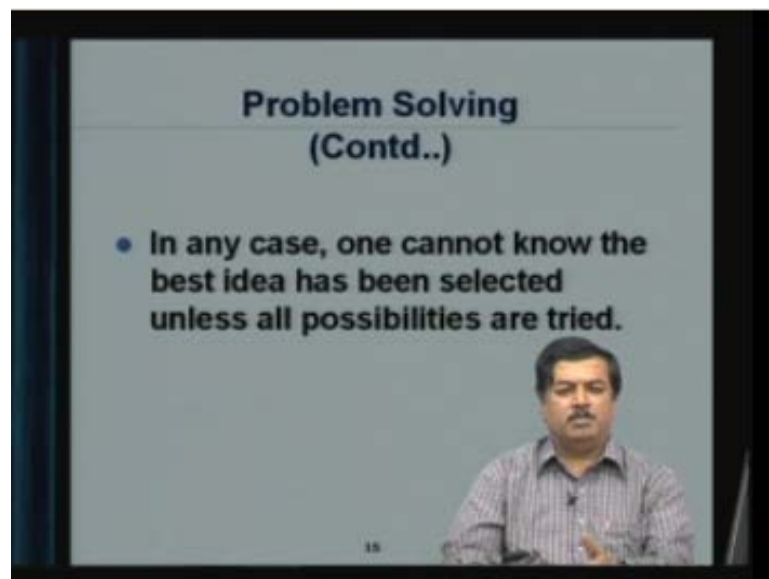


So but when you are talking about the lots of different ideas, so there is a kind of a divergence I think people talk about this kind of a divergent thinking as the first step. So that means you are generating several of the ideas and then you can do what is known as a convergent thinking where you can look and combined set of solutions. So the question is

that how do you, how do you look at the problem and also the they generate alternatives and the you know while generating alternatives the quantity is important. So when we discuss about the about the brainstorming also we will see this particular dimension.

So often thinking of new ideas makes one rethink and improve old ideas. So as people are start saying and when you do this in a kind of a group what people use the word group problem-solving, one starts building on the other. So one starts using the thoughts of the other and then gives one better solution. So the process leads to a kind of an improvement in not only in the quantity but also on the quality, so as you start synergizing as you start using that quantity into a kind of a combination of things likely it will lead to a better quality of solutions to the to the problems.

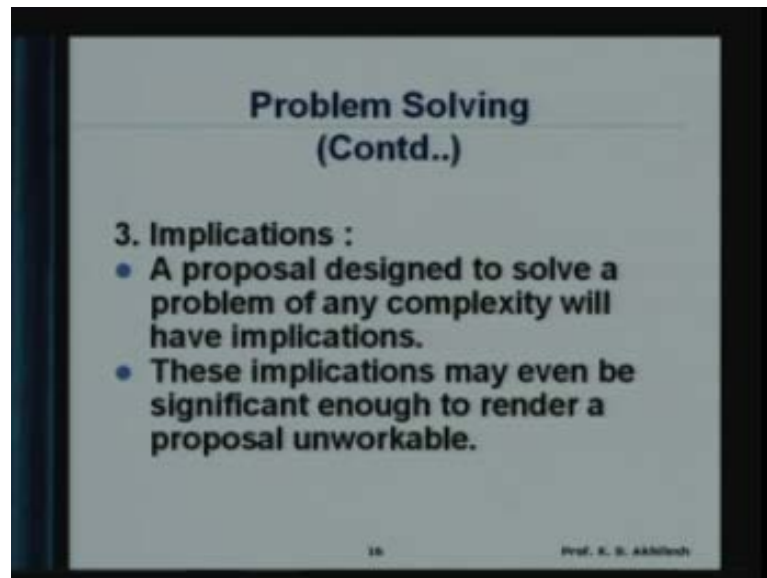
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So at any case one cannot know the best idea has been selected unless all possibilities are tried out for sure that one has to tryout but it is only a making an estimation, it is only making sure that all the aspects of the problem is covered and then also you are coming up with the possible alternatives, it in any technology improvements in any service improvements, the people who understands the problem can sit together they can write down all these details and identify what is the correct problem and then start generating that required thoughts about how to deal with this problem and when they do that they can work on each other's thoughts, each other ideas to come up with some better solutions but do not accept that better solution

but each time you see how more or what more can be done upon and improve upon and this is another way of saying is the kind of an implications.

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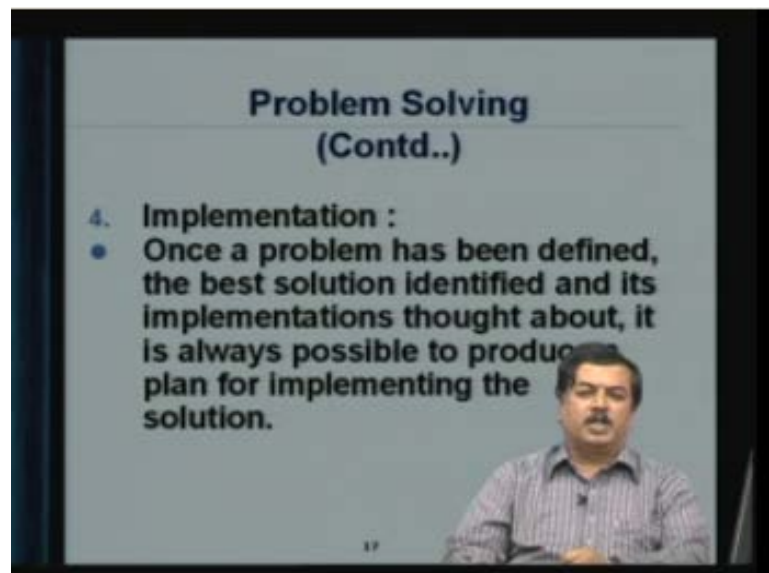
So that means a proposal designed to solve a problem and now you have to see of any complexity will also have some implications that means you are trying to solve one problem but you may also create two other problems to the organization. So in other words people see motivation and motivation is an important problem and then when they start seeing the alternatives they may generate you know many many alternatives to this problem of motivation but then understanding, analyzing and some finally they come to the may come to that conclusion no no no we have to provide incentives.

So unless you provide incentives, you cannot motivate so that means money is defined as the motivator. So once you start seeing that and then suddenly you will see the implication wise there is a cost implication that means that how much of the salary you would give as a percentage of this incentive. So then you will also see whether such increase will affect the survival of the company or do you still able to do better and increase your margins. So as you see that you have identified a problem and then you have looked at various solutions and then you have come to that solution of the incentive but then this incentive has a that the there is a cost implication apart from the cost implication okay is a tomorrow if you do not give incentives people will not work.

So that means it is also going to condition them towards money and then whatever the incentive you have given they will do only that and you know to do little more things you have to give more incentives. So that means every behavior need to be incentivized, so you may also condition them towards those things it happens with the children. So you give say that no no no no, do your homework that I will give you one chocolate okay. So the next is okay now then it gets into a kind of a bargaining thing okay today I will not do so then you insist no no no you shall do but then the kid will say no no no give me two chocolates then only I will do.

So the implications of that you have solved a problem at the first time by providing the chocolate and made that kid to do the homework but in the next time that you have to have to do two, two or three to get to the same kind of behaviors. But probably you have not analyzed the another dimension is whether the how the kid perceives this the homework itself or how the homework enables the performance of the student in the real work. The real work in the sense at the time of examination or the classroom performance and things like that, so the point is that one need to evaluate the implications of the solution.

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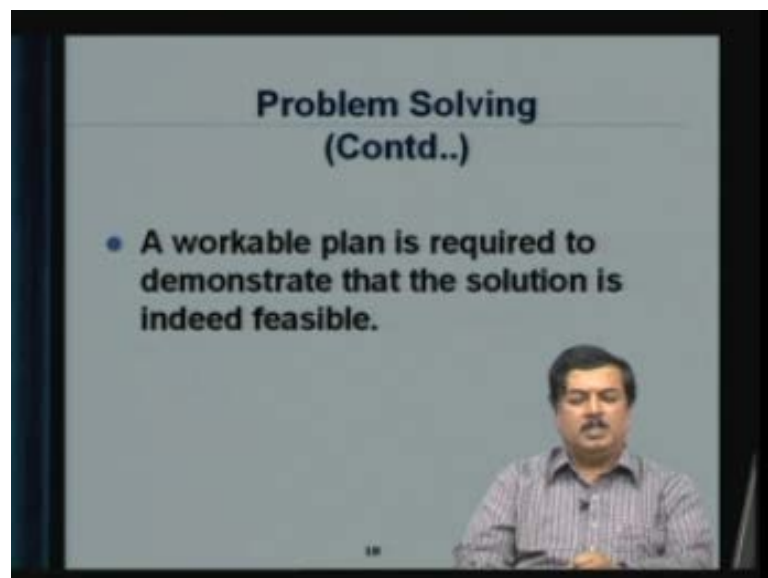


So these implications may even be significant enough to a render a proposal unworkable. So that means by spending that kind of a time by seeing this analysis you may also say I think this is not going to work I think the implication may take this thought that the solutions



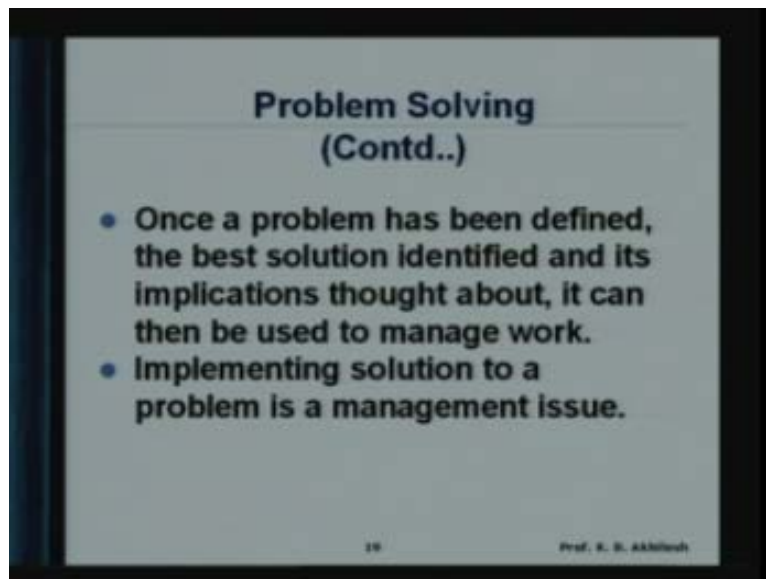
whatever has been identified may not work at all. So people say it is a reality check so assuming that you have identified the problem generated the alternatives and then followed with the best of the solution what could be done also it get into the implementation. So once the problem has been defined the best solution identified. Now you are seeing about the implementation you know also thought about it is always possible to produce a plan for implementing the solution sometimes you may go in an incremental way sometimes you may do okay we will solve only this part of the problem and then we can do the kind of a rule out in other groups or in other places and other departments.

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So that means an implementation can be done in an incremental way, sometimes organization as a whole or sometimes in one go or in sometimes in through at continuous cyclical fashion so what is important is a workable plan is required to demonstrate that solution is indeed feasible. So that is how we talk about some demonstrations in terms of the you know the whether the solution methodology will work or not sometimes you want the prototype, sometimes you want the proof of the concept and sometimes it is desirable to show that it works in one situation and also it is possible to implement in other situations through appropriate extrapolations. So the problem-solving this if you see once a problem has been defined and also the best solution identified the implications are also thought about then you have to see then it could be then used to the managing the work. So the implementing solution into a problem is always becomes a kind of a management issue.

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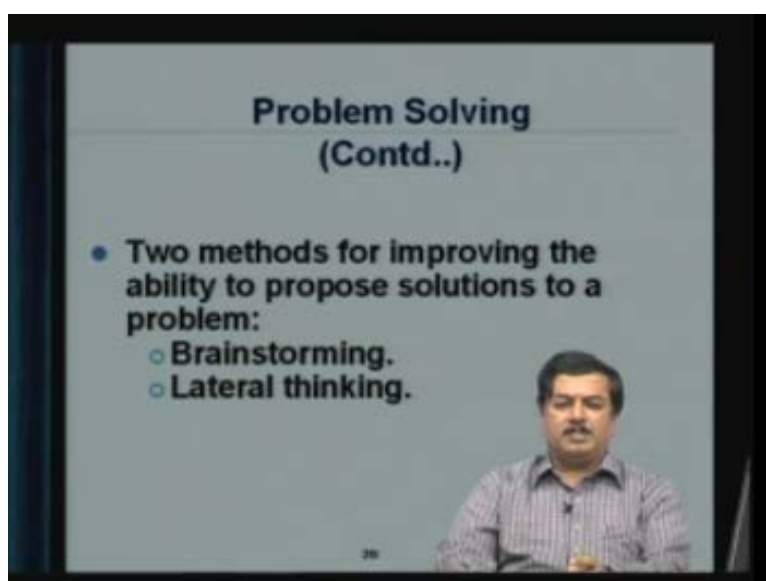
**Problem Solving  
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- Once a problem has been defined, the best solution identified and its implications thought about, it can then be used to manage work.
- Implementing solution to a problem is a management issue.

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So the so it is not enough, good enough to throw up set of ideas but to understand its total implication at the individual level, group level as well as at the organizational level also you have to see historically what influences of where we have done similar things and be very successful but also look at the cost and the time implications within the which all the whatever the activities are going on and typically it is resolving many of these issues.

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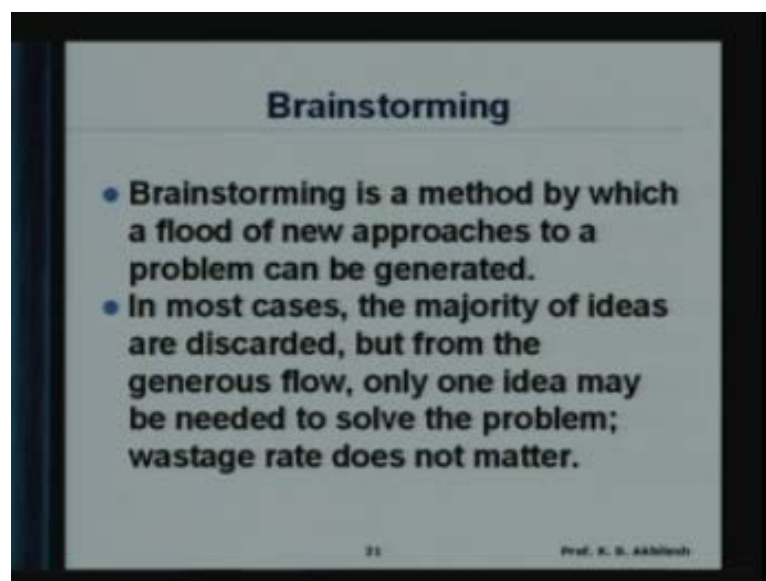
**Problem Solving  
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- Two methods for improving the ability to propose solutions to a problem:
  - Brainstorming.
  - Lateral thinking.

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So problem-solving that is how is also seen at the implementation level it becomes a it basically a kind of a management problem. So the from problem-solving, we will also look into this the other methods, the other methods to improve for the ability to propose solutions to a problem we have already talked about the quantity as an important thing. So we will see this brainstorming as well as the lateral thinking as the kind of you know the propose solutions. Brainstorming has been mentioned in in different ways but the brainstorming is a method by which a flood of new approaches to a problem can be generated.

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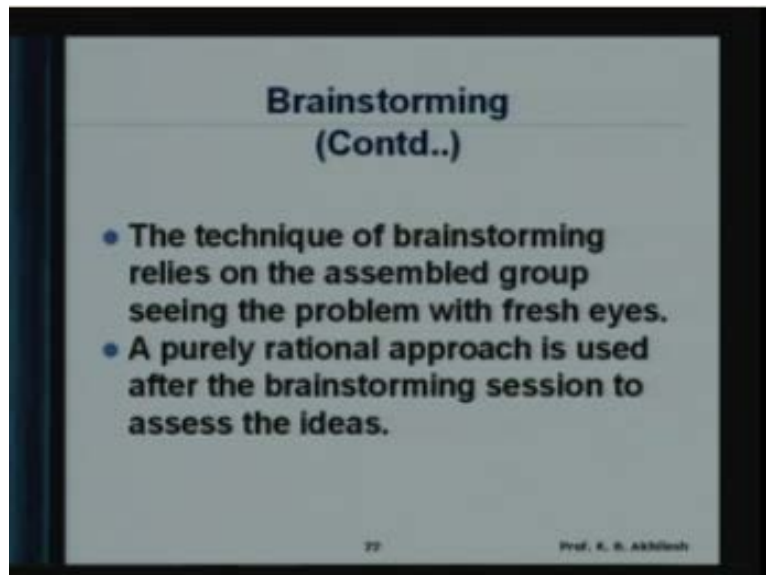


So that means what you are trying to do is that when people sit together you try and ask this question that what is the problem and what is that to be done about it, what has caused the situation and how can we improve the things to the future. So the several question whatever we posed in the past. So in most cases the majority of ideas are discarded, so that so from the from the generous flow only one idea may be needed to solve the problem. So that means in a brainstorming the wastage rates does not matter really the then you are talking about the quantity and then not really the kind of a quality as the first stage that means you are asking seeking as many ideas as possible the technique of brainstorming relies on the kind of an assembled group seeing the problem with a fresh eyes.

So that means they are bringing new perspectives new thoughts and then the purely rational approach is used after the brainstorming session to assess the ideas. So but in a idea

generation level is that you really are not going to judge anything, it could be rational, it could be irrational, it is emotional illogical, logical, silly, great all of these things are acceptable at that first stage. So the first stage is of where you are generating and welcoming as many ideas as possible from the other.

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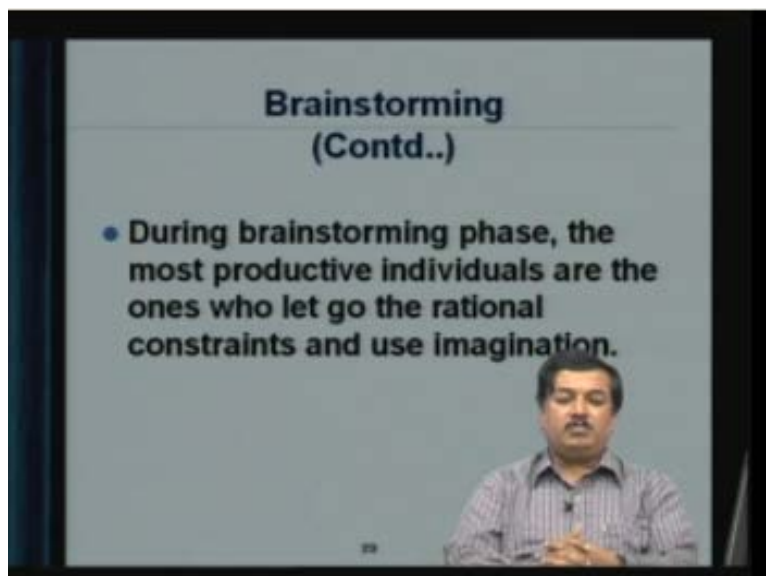


**Brainstorming  
(Contd..)**

- The technique of brainstorming relies on the assembled group seeing the problem with fresh eyes.
- A purely rational approach is used after the brainstorming session to assess the ideas.

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**Brainstorming  
(Contd..)**

- During brainstorming phase, the most productive individuals are the ones who let go the rational constraints and use imagination.

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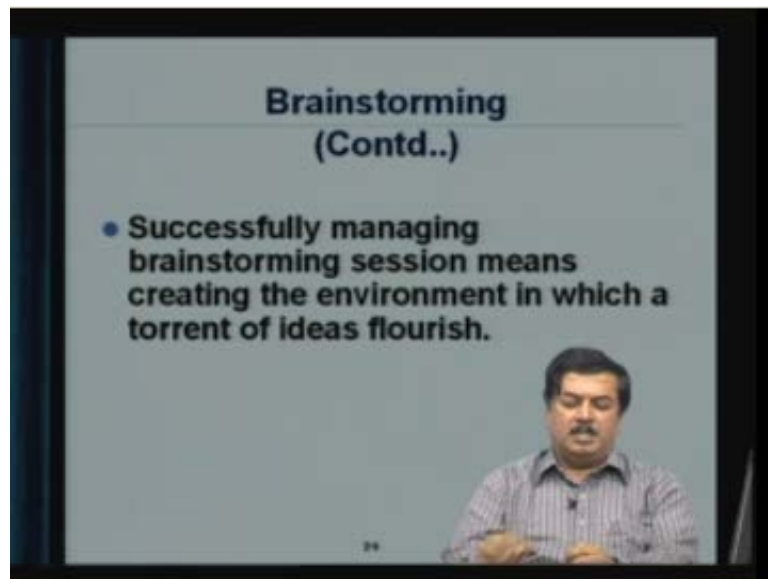
So during brainstorming phase the most productive individuals are the ones who let go the rational constraints and then use their imagination. So people have written books on imagination or the people also use this word out of the box thinking. So you do not want a step-by-step solutions to a given problem but then can you come up with can you come up with highly innovative and the highly at this at one point of time can look impossible irrational but come with the those thoughts, so when people thought that the for example if you take radios.

So at one point of time people thought radio is a kind of a dead and gone as the complete technology but then suddenly the people made it because as that FM came and people were able to get that kind of a quality listening. So suddenly these kind of a you know new thought and new ideas it gave a kind of a competition to the to the TV's and similarly, the print media went through the same thing you know when people talked about internet, people talk about worldwide web and the digitization and people clearly assume that that the days of the you know the library and everything gone but the print media came up with much more attractive propositions.

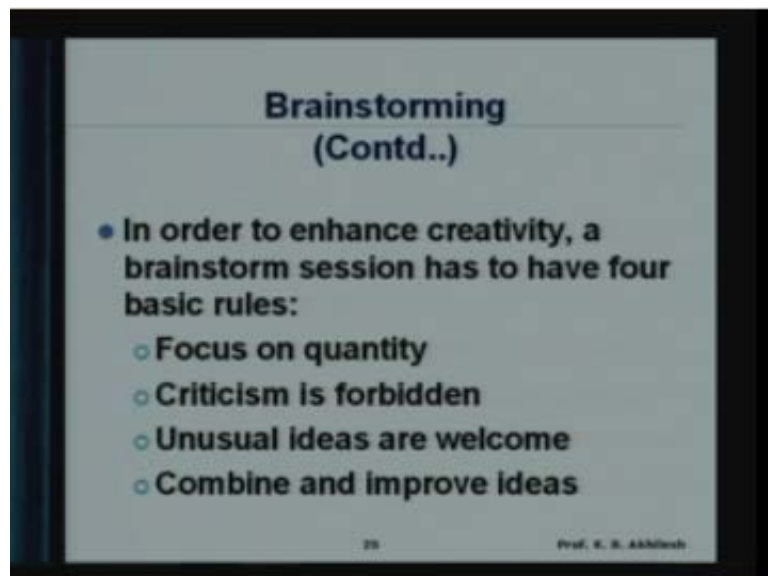
So in other words, the creativity and the brainstorming go together and the brainstorming demands that kind of a thinking of out of the box, creating that kind of a newer solutions and then providing that kind of a business opportunity. So in a brainstorming session in this people are asked to think in as many ways as possible in as many different ways as possible and also from different perspectives take the role of the customer, take the role of the banker take the role of the manager, take the role of the user, take the role of so any implementer so the so the people do take different roles and then think about it and that is where the much of the things is in the minds of the people here free mind, a free flowing mind generates many thoughts and many ideas.

So as this brainstorming happens, so then the it means what is the successful brainstorming means what it is an environment in which a torrent of ideas flourish. So people are not judgmental people do not laugh because somebody has given some thought or some idea. Obviously, it may or may not work not every idea can be understood or can be productionised or can be implemented but the what people do will come, people do will come all the things at one phase but after that brainstorming phase after collection of all the ideas you move to the next level of problem-solving and implementation as well.

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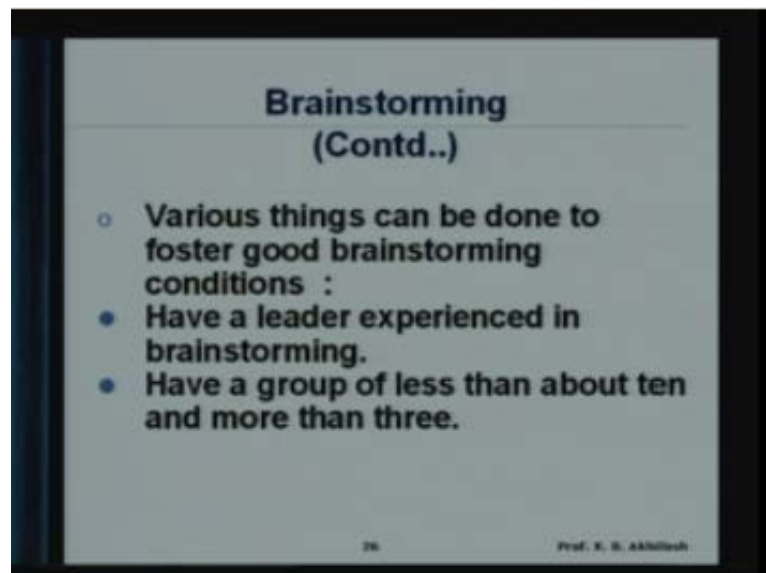
So in order to enhance this kind of a creativity and successful brainstorming session has to have four basic rules one you have to focus on quantity. So the focus on quantity is can you come with more thoughts can you give more ideas, so you demand idea one idea 100 idea, 150, so it does not matter so get as many ideas as possible that is on the kind of a quantity. So ask questions why how what can be done, so what are the alternatives available if not so what

so you know in different ways the thoughts can be generated the quantity can be demanded but also would this criticism is highly forbidden.

So that means members the team members cannot talk about or cannot reject the ideas at the I know at the idea generation level and also very very very clearly you have to state that unusual ideas are welcome, so does not mean as long as you think it is something relevant come up with some more thought, some more ideas and the you also combine and improve the ideas so that means you can build on the thoughts of the other build on the you know the you know the time give that kind of a changes.

So simplest of the thought could be is that a small gem clip how a gem clip can be used so the group has come up with an as many ideas as possible in a in an example of a brainstorming session. So people thought thought about it is it can be used as a paper weight, it can be used as making a chain, it could be too many things. So it starts with two ideas, three ideas initially, then 10 then 20 then 50, a simple thing then then people start seeing it is you can use it in it from over 150 different ways.

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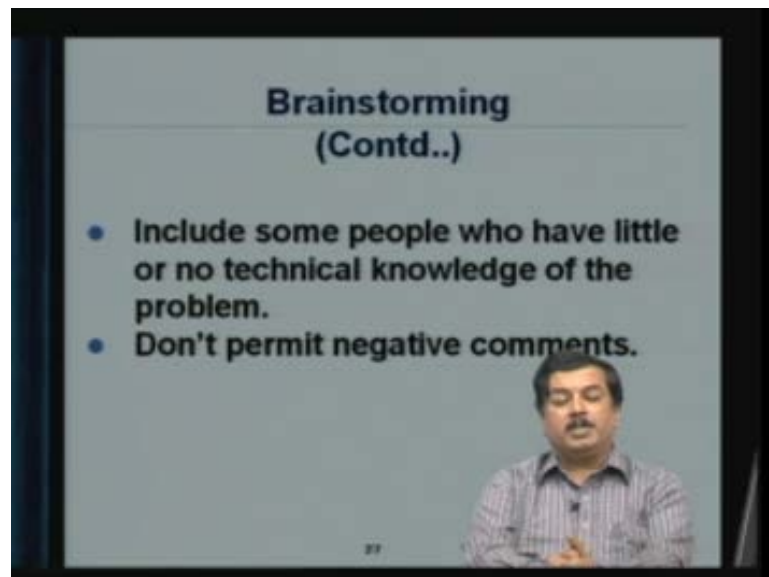


So that means when people start seeing that helps them to look at opportunities and whenever the problem comes that helps them to see the problem in different shades and also come up with great thoughts and also great ideas. So having these principles are extremely important

and also the various things can be done to faster the good brainstorming conditions ideal is that have a leader experienced in brainstorming. So that means he is able to provoke, he is able to demand, he is able to show some of the examples of how one can go about or how one can do it.

So having that kind of a facilitator, using that kind of a medias where people ideas can be you know put together and then it to one can start structuring around those things and also the important thing is the group size you must have a group of less than about 10 people and certainly we should have a more than 3 people. I think that is an ideal group size as we have seen already more than 10 could mean that a kind of a noise rejection of some of the ideas, repetition of the thoughts and people just rejecting the other based on the kind of a clicks what they have or belongingness. So the kinds of issues of that nature the other side is that when you have less than 3, the point is that you may not get enough thoughts. So people not in a position to build on each other's thoughts or combine and come up with newer solutions.

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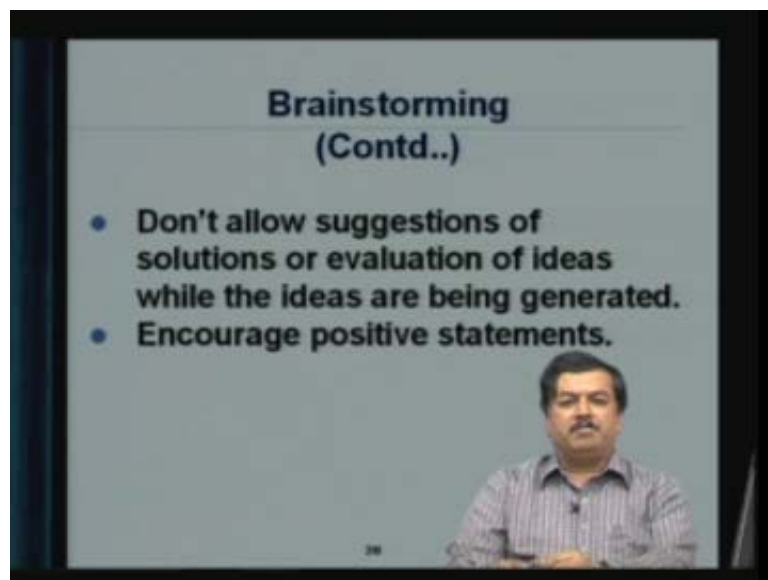
So the idea if a brainstorming is to put together that kind of a required number, create an undisturbed kind of a situation and people focus on the problem and generate as many possible solutions to the problem without having any inhibitions, without having any judgmental kind of a climate and through that process they do what is known as an out of the box thinking come up with extremely new solutions, many organizations have found it very



very useful. So sometimes it is also desirable to include people who have little or no technical knowledge of the problem and particularly, the sometimes the kids are very useful sometimes the young minds are very useful, sometimes it is desirable to have people from different background and different different fields because they may see what people call it as upside down.

So may they change the problem from a different prospective and come up with come up with alternate paradigms and definitely do not permit it in a negative comments, the group has to have that kind of a acceptance, the group should welcome the thoughts but not necessarily that every thought should work towards getting into the solution mode.

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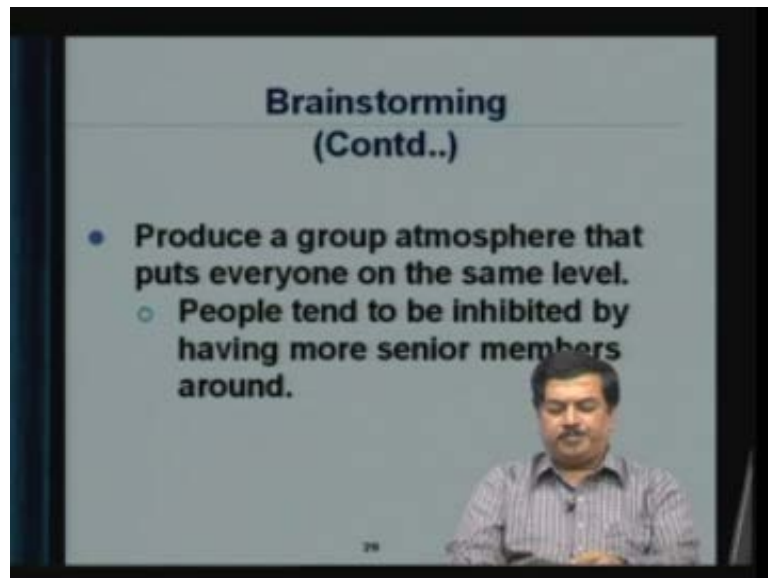


So as you have seen the brainstorming becomes a very fundamental thing of the innovation, creativity process do not allow suggestions of solutions or evaluation of ideas when the ideas are being generated. So that means you have to clearly separate this out idea generation to the next level of idea processing. So you must encourage positive statements where people build on each other contribute with newer thoughts and newer insights.

So once that is done you see a produce the group atmosphere that puts everyone on the same level. So that means what happens is in some organization boss is present then people are very careful in telling because they may think somebody or boss may think it as silly or boss

may come and ask who asked you to suggest such things. So people tend to be inhibited by having more senior members around. So that means you must create that kind of a feeling amongst the group members that that all are equal, all are colleagues and the collegiality is an important dimension of participation.

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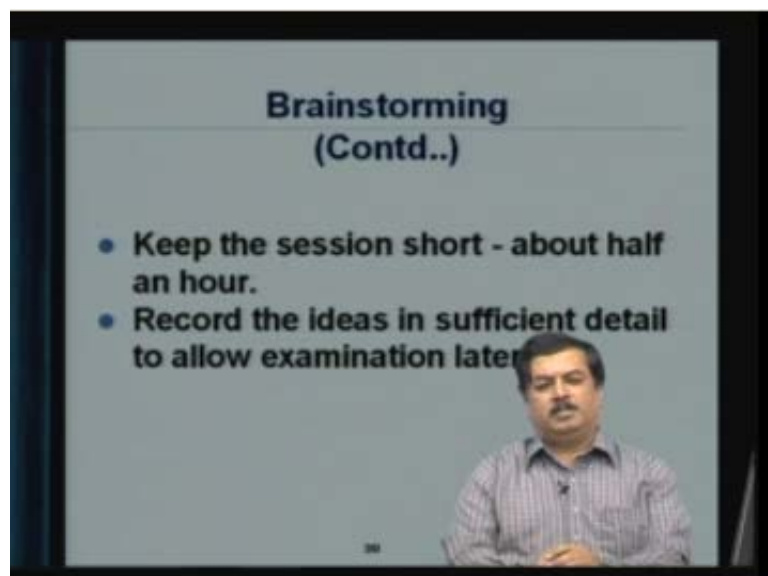
**Brainstorming  
(Contd..)**

- **Produce a group atmosphere that puts everyone on the same level.**
  - People tend to be inhibited by having more senior members around.

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**Brainstorming  
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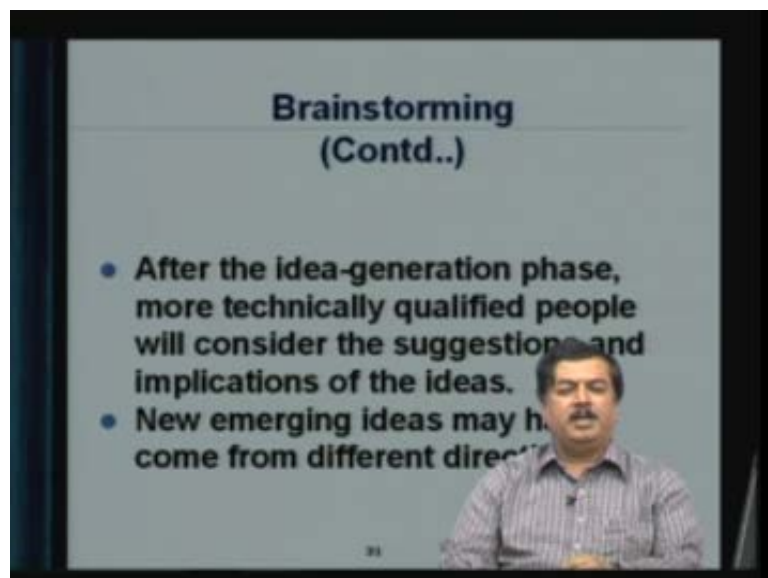
- **Keep the session short - about half an hour.**
- **Record the ideas in sufficient detail to allow examination later.**

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A man in a striped shirt is visible in the bottom right corner of the slide.

So keep the session short about half an hour because too much of a time you know could lead to a repetitive, very boring and it could be it could have that effect of demotivation. So you record the ideas in sufficient detail to allow the examination later. So that means do not write only telegraphically but some more thoughts if they are expressed indicate and include those things as well so that those things can be elaborated for its relevance, its practicality or its implication towards the implementation as well. After the idea generation phase more technically qualified people can sit together consider all the suggestions and also implication of the ideas.

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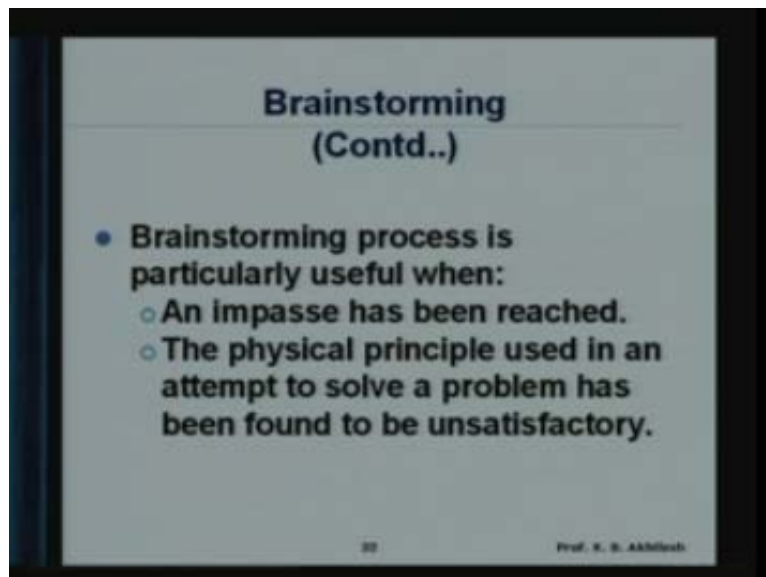


Now one can be very critical one can be very judgmental one can have a systematic ways of seeing these ideas through different filters and now you can accept or throw out. So the now beyond the quantity you are seeing now its relevance, its implication, its use and things like that. So then now emerging ideas may have come from different directions possible, so what is important is not from where the ideas come but what those ideas would mean in order to understand and solve the problem. So that is where that the irrespective of the origin of the thoughts irrespective of who has given the ideas the process must be created, the criterion must be set to evaluate each of the collected ideas.

So brainstorming the as a process if you see this particularly useful when an impasse has been reached that means you know the people have already put their thoughts and have come to

that kind of a conclusion and the physical principle used in an attempt to solve a problem has been found to be unsatisfactory. So that means the existing methodologies have been used and has been worked out and then it is now you have to go beyond that.

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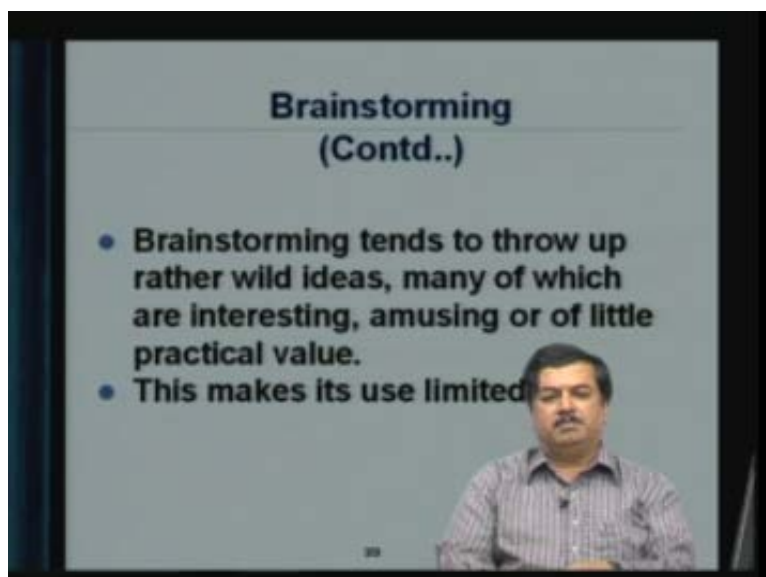


**Brainstorming  
(Contd..)**

- **Brainstorming process is particularly useful when:**
  - **An impasse has been reached.**
  - **The physical principle used in an attempt to solve a problem has been found to be unsatisfactory.**

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**Brainstorming  
(Contd..)**

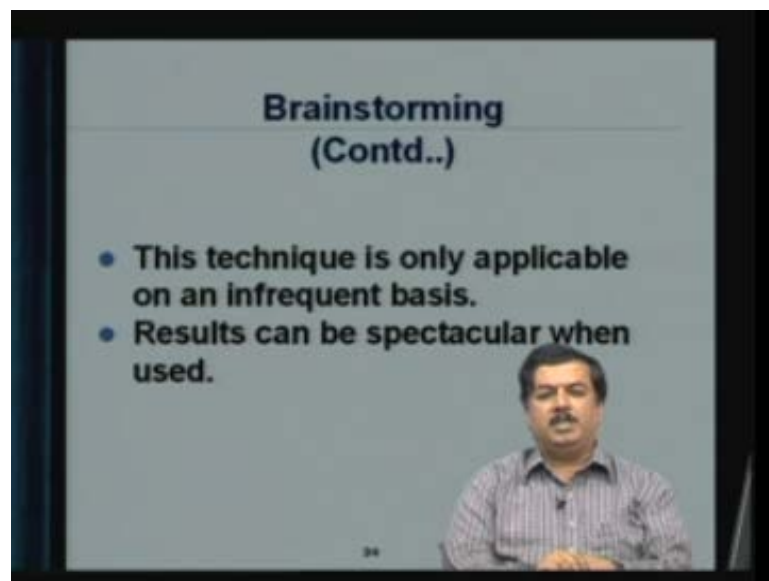
- **Brainstorming tends to throw up rather wild ideas, many of which are interesting, amusing or of little practical value.**
- **This makes its use limited.**

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So then that is the time where people can sit together and then see how to see the problem from different views and different perspectives. Brainstorming tends to throw up rather wild

ideas and many of which are interesting amusing or sometimes of little practical value. So that it says you cannot afford it you may see whenever you may feel also great about it but the point is in lot of quantity also comes with lot of junk. So this makes the use of the thoughts as very limited, so sometimes you see having gone through a brainstorming session not enough could be achieved or all the ideas of many you know mostly useless and it may not meet the expectations also.

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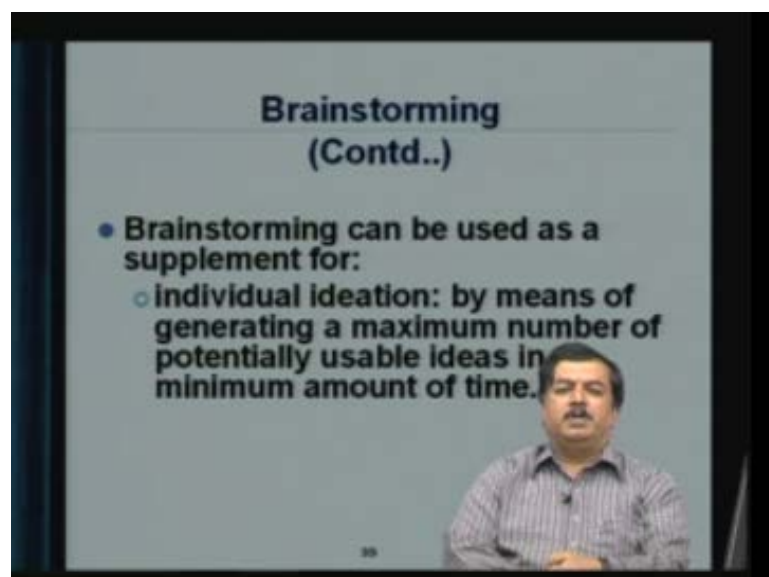
**Brainstorming  
(Contd..)**

- This technique is only applicable on an infrequent basis.
- Results can be spectacular when used.

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**Brainstorming  
(Contd..)**

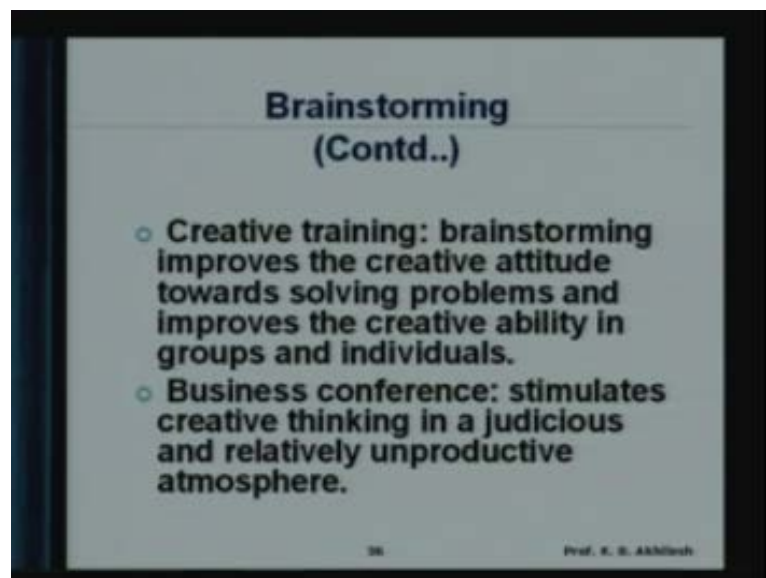
- Brainstorming can be used as a supplement for:
  - individual ideation: by means of generating a maximum number of potentially usable ideas in minimum amount of time.

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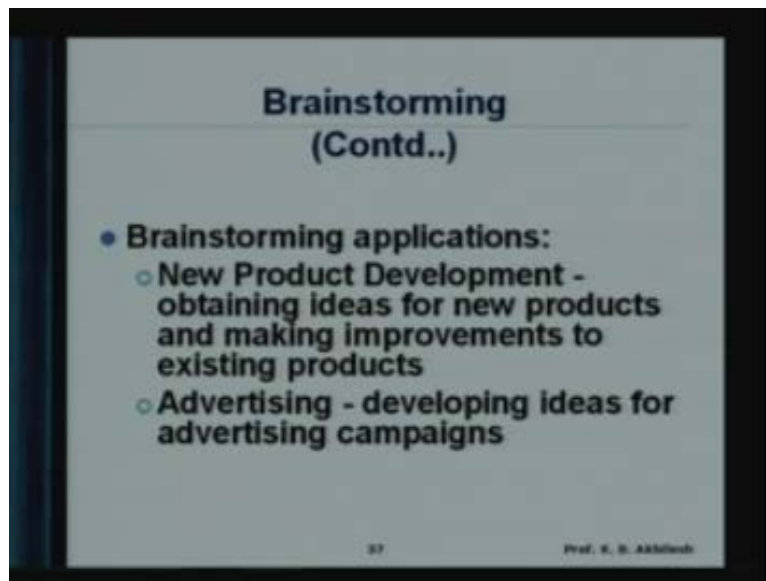
So this technique is only applicable when you think you know in terms of you know on an infrequent basis so sometimes the results can be spectacular when it is used appropriately. So the can brainstorming can be used as a supplement for many things for particularly, the individual ideation that means by means of generating maximum number of potentially usable ideas in a minimum amount of time. So the you know it can trigger that required individual thoughts within the short period of time you are able to provide those intense thoughts, creative training, the brainstorming improves that creative attitude that means always you can improve upon you can identify the problem and look at it.

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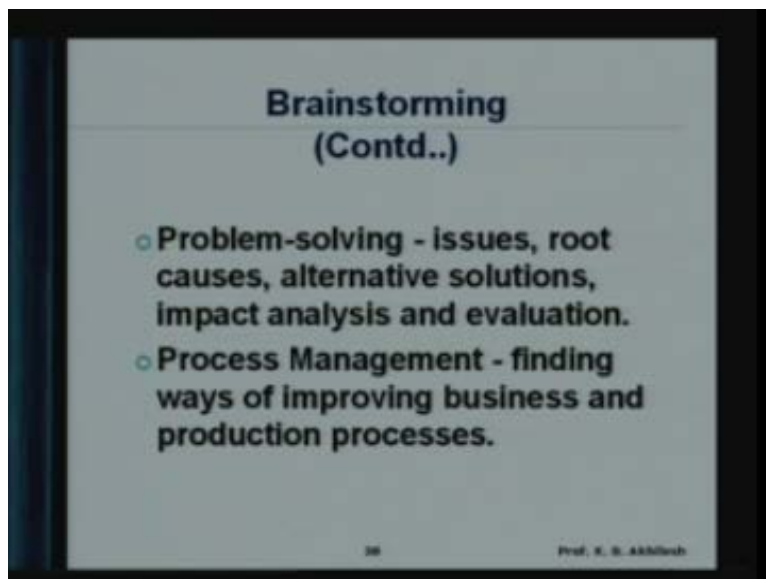


So the solving abilities, so it improves the creative ability in groups as well as in individuals it can also be used in a you know business conference where set of people are together. So in a the stimulates creative thinking in a very judicious and relatively unproductive atmosphere. So it provides that kind of a thought where people can do a little bit of out of the box thinking, the brainstorming applications have been found very useful in new product development obtaining ideas for new products or making improvements to existing products. It is also has been found to be very useful in advertising, in developing the ideas for advertising campaigns and then come up with some newer thoughts about how to how to improve upon whatever done in the past.

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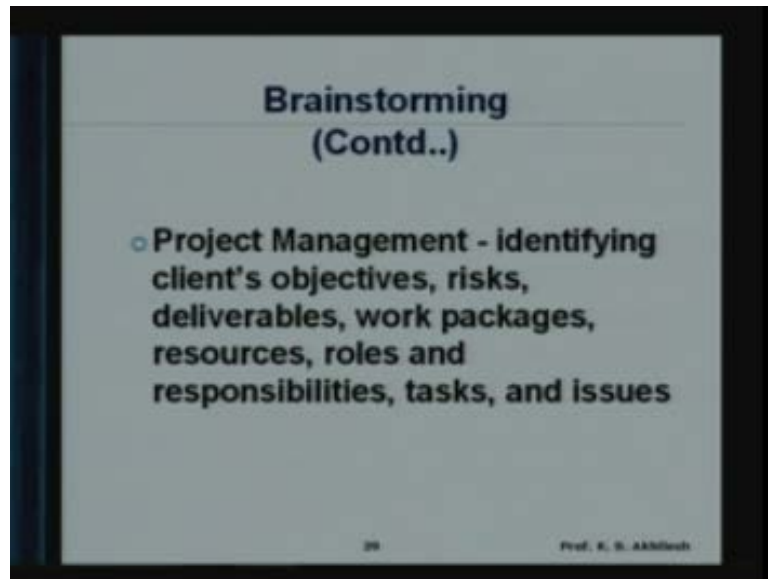


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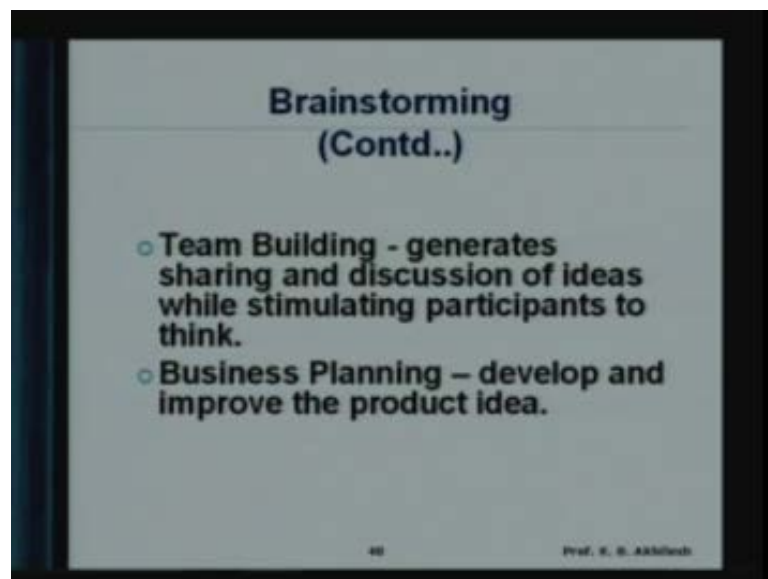


So the problem-solving issues and get into the root causes and generating alternate solutions also finding that kind of making an impact analysis and the evaluation and also it has been found very useful in process management, finding ways of improving business as particularly the production processes where the relevant people can come together discuss and come up with set of alternatives brainstorming has also been put to use in project management.

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So identifying the client's objectives the kind of risk associated with about the deliverables about the work packages also when think about the resource commitments, identification of the roles and responsibilities, the task allocations and also the issues regarding the implementation. So brainstorming has been found to be pretty useful also in team building they generates the sharing and then discussion of ideas while stimulating participants to think.



So it where people struggle people stretch and such challenges also make them to be a part of an you know the that enjoyment process.

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**Brainstorming  
(Contd..)**

- **Indirect results of a brainstorming session:**
  - **The main purpose of brainstorming is to generate ideas to solve a problem; however, a group brainstorming session has more value next to the solving idea.**

41 Prof. K. S. Ashish

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**Brainstorming  
(Contd..)**

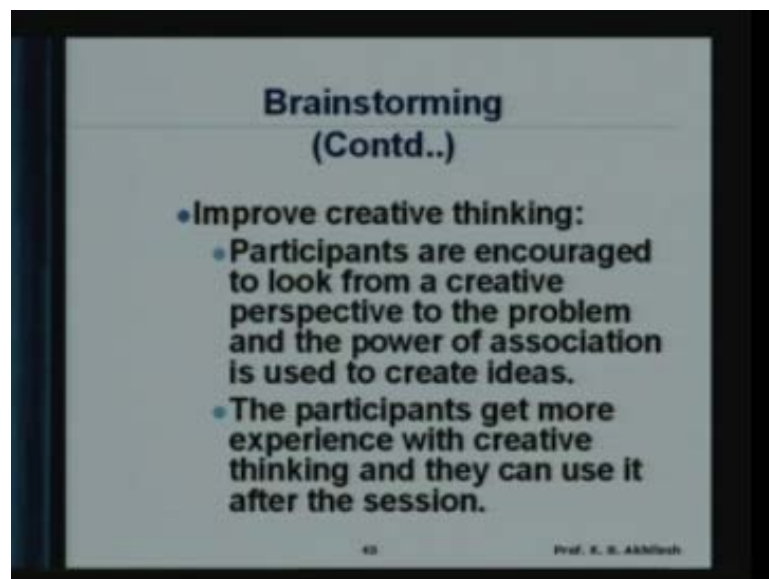
- **For example:**
  - **Improve initiative:**
    - **During a brainstorm session, participants are encouraged to constantly throw their ideas, to take initiative all the time.**
    - **This initiative can last even after the session.**

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So it also it is used in business planning where you develop and lots of scenarios and improve the product ideas and also how to approach the market place helps in developing appropriate business models and business plans and evaluating the alternatives. So there are not only

these kinds of a direct applications many people also have talked about the indirect results of a brainstorming session. So the main purpose of brainstorming is to generate ideas to solve a problem but however a group brainstorming session also has more value as the you know than just we are solving the problem for example, you look into that it improves initiative because people are given a chance to speak people are asked to contribute participants are encouraged so to consistently throw their ideas they know to take initiatives and all the time.

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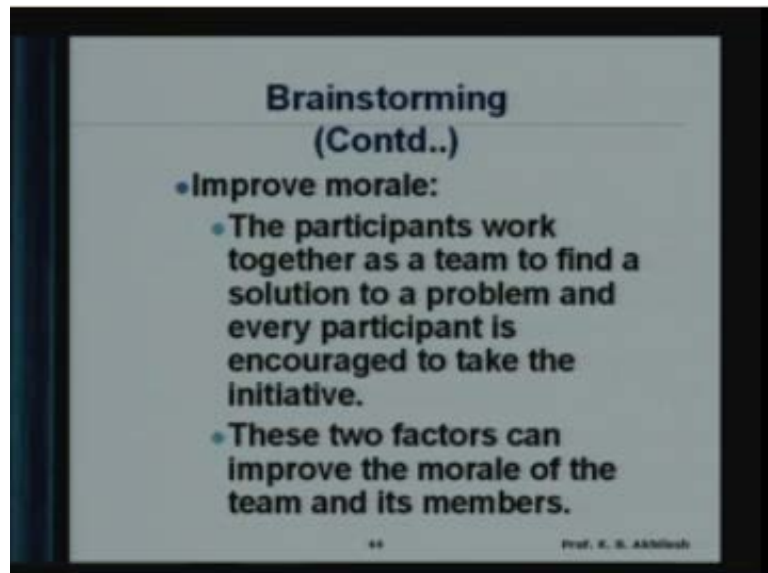


So this initiative can last even you know after the session, so that people get that yes they have been an important part of this whole process it also improves that creative thinking and they have to do as I mentioned earlier encourage to look from a creative prospective means out of the box thinking about the problem and the how you can solve it helps them to see all the time improved ideas, the participants get more experienced with creative thinking and they can use it even after the exercise is over.

So then if they can always think about applying these things in different situations, different context it also improves the morale where this feel as the part of the group and part of the organization and the participants work together as a team to find solutions to a problem and everyone participates that also builds that overall the group feeling or the we feeling, it improves that morales and the team spirit it also builds that kind of an enjoyment when they see a problem and solve that problem it builds that kind of an excitement and the fun in the

work place makes the atmosphere much more for joint problem-solving and working together.

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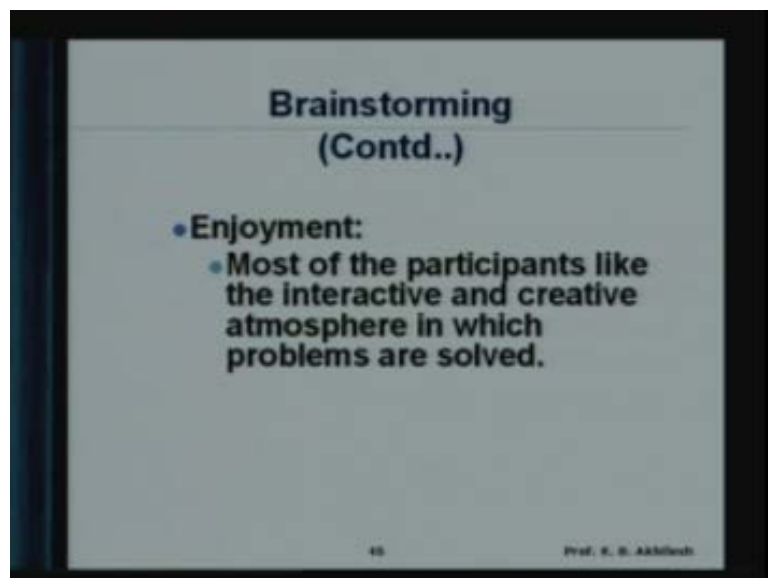


**Brainstorming  
(Contd..)**

- **Improve morale:**
  - The participants work together as a team to find a solution to a problem and every participant is encouraged to take the initiative.
  - These two factors can improve the morale of the team and its members.

44 Prof. E. S. Akhlesh

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**Brainstorming  
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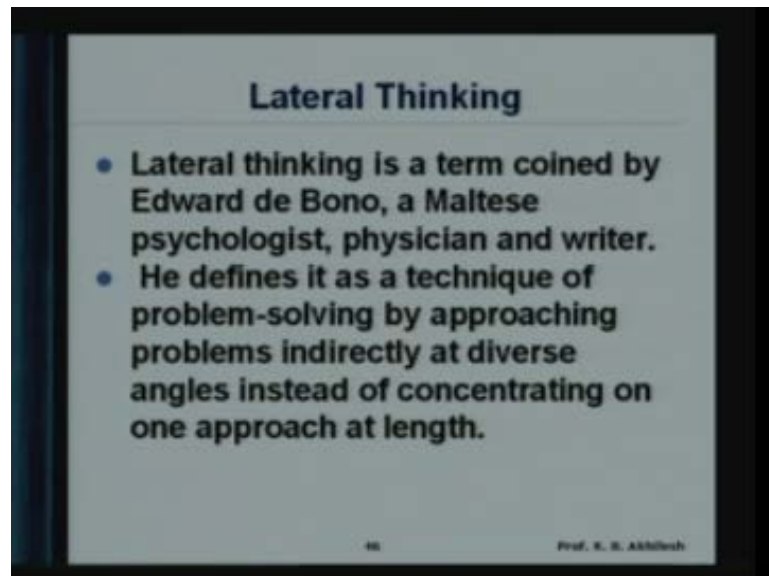
- **Enjoyment:**
  - Most of the participants like the interactive and creative atmosphere in which problems are solved.

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So the apart from this we also could think of the lateral thinking the lateral thinking mentioned by Edward de Bono is a is where the you know he it came up with this you know a psychologist ,he is a physician and a writer. So he defines is a kind of a technique of

problem-solving by approaching problems indirectly at diverse angles instead of concentrating on one approach at length. So you have to where different adds and examine the problem from different prospective. So it is the opposite of what people talk about the vertical thinking.

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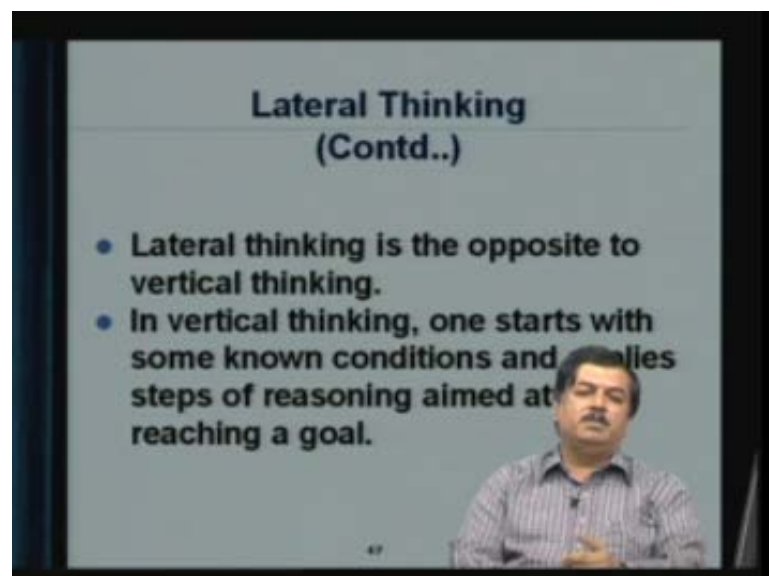


**Lateral Thinking**

- Lateral thinking is a term coined by Edward de Bono, a Maltese psychologist, physician and writer.
- He defines it as a technique of problem-solving by approaching problems indirectly at diverse angles instead of concentrating on one approach at length.

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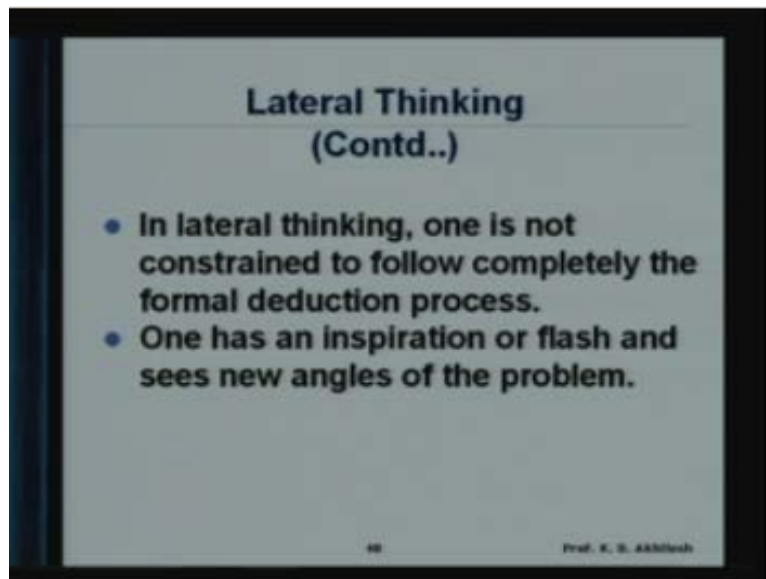


**Lateral Thinking  
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- Lateral thinking is the opposite to vertical thinking.
- In vertical thinking, one starts with some known conditions and applies steps of reasoning aimed at reaching a goal.

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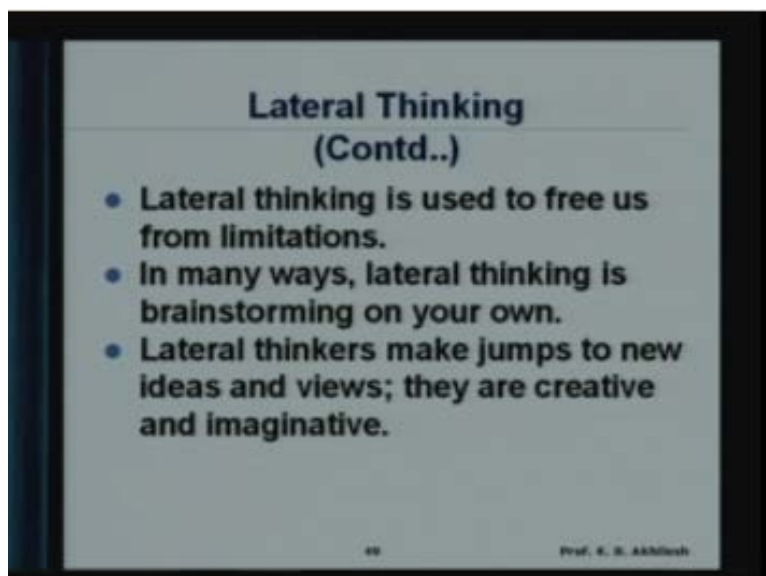
**Lateral Thinking  
(Contd..)**

- In lateral thinking, one is not constrained to follow completely the formal deduction process.
- One has an inspiration or flash and sees new angles of the problem.

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So one start with some known conditions applies steps of reasoning aimed at reaching a goal in the vertical thinking but in a lateral thinking you move from one to the other, so your end result could be the kind of an input to come up with an appropriate problem definition. So in lateral thinking one it is not constrained to follow completely the formal deduction process, one can also has an inspiration or a flash and see new angles of the problem by going through different experience and bringing about different insights to the problem.

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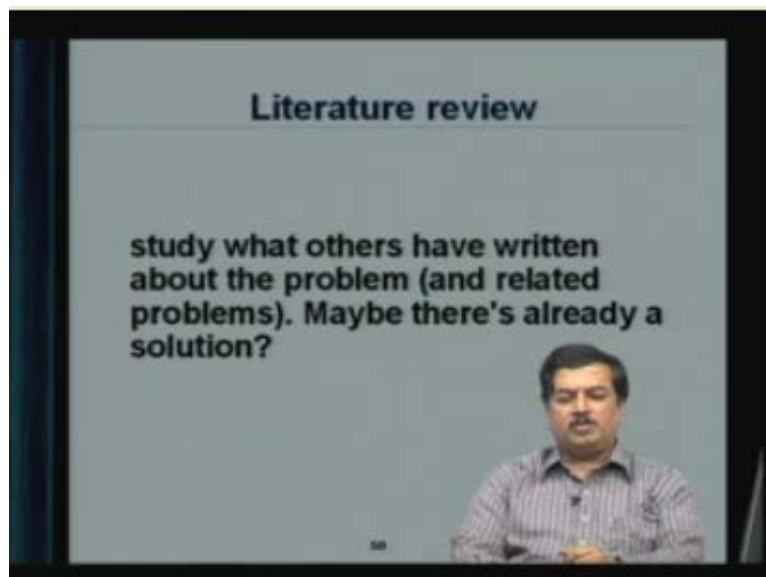


**Lateral Thinking  
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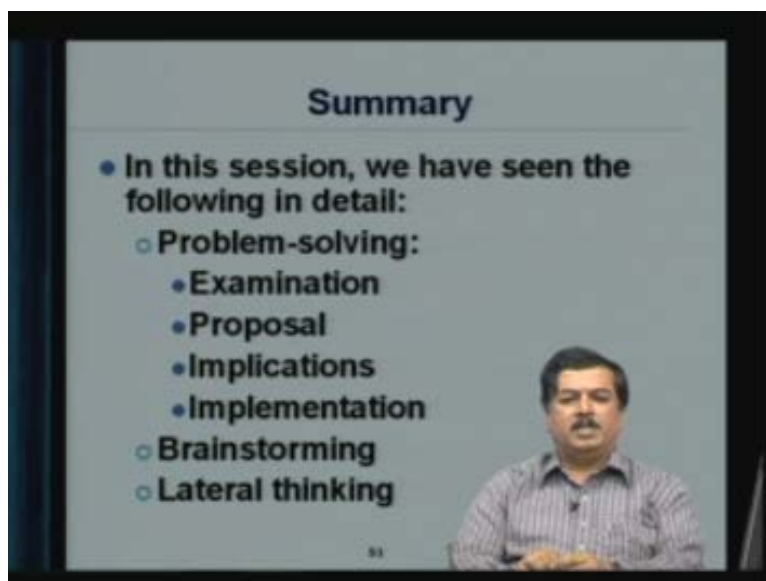
- Lateral thinking is used to free us from limitations.
- In many ways, lateral thinking is brainstorming on your own.
- Lateral thinkers make jumps to new ideas and views; they are creative and imaginative.

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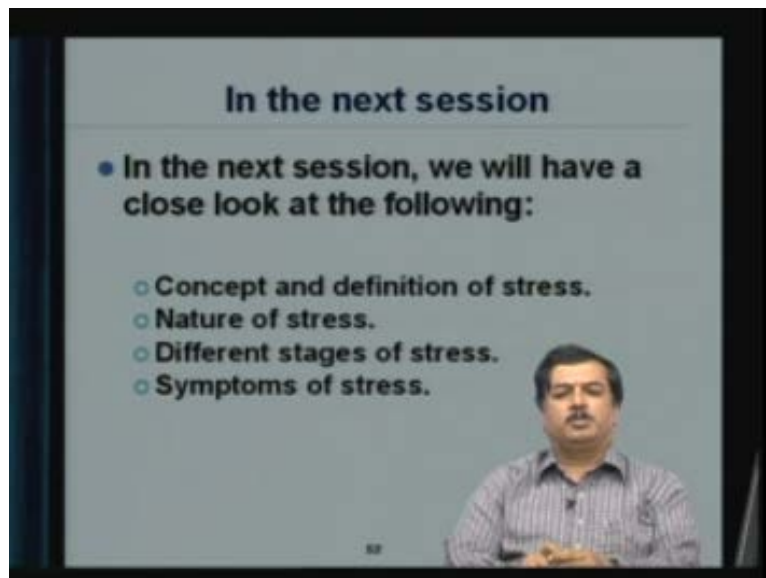


So that is how the lateral thinking is used a kind of to free us from all the limitations sometimes our own blocks and thoughts, so lateral thinking has been seen as a kind of the you know brainstorming one so one and the lateral thinkers they get into new ideas and view suddenly and it could be very creative as well as very imaginative one can attempt this to go through in a systematic fashion. Other important thing very widely used is the literature review, literature review is a study of what others have written about the problem and then

you know you have also had think about the related problems and then you think maybe there is a already a kind of a solution.

So a systematically analyzing what has been published already and then getting into various dimensions also help for the systematic thinking solving the problem in a more creative way more innovative way. So for what we have done is in this session we have seen the following in detail the problem-solving in terms of examination, proposal, implications and implementation, brainstorming, lateral thinking and also the literature review.

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In our next session, we will focus on the another important dimension of organizational functioning we will take a close look at the concept and definition of stress and the nature of stress and different stages of the stress and what are the symptoms of stress and what needs to be done.