Course Name: Organizational Behaviour: Individual Dynamics in Organization

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Week – 10

Lecture – 03

Lecture 48: Creativity and problem-solving

Hello students. Welcome back to the course on Organizational Behavior, Individual Dynamics in Organization. Today we move to the third lecture of module 10 where we look more deeper into creativity. We were travelling through the module of creativity, psychological capital and mindfulness and specifically today we look into creativity and problem solving.

I am Dr. Abraham Cyril Issac. I am a faculty at the School of Business, Indian Institute of Technology, Guwahati.

So, today's theme for the lecture would be, “even when we find evidence that contradicts a solution we have chosen, we are apt to stick with our original hypothesis.” Just give it a thought. Many a time you would have come across a particular decision which you have made. There were some documentary evidences that came against it after that. Still, you are hesitant, you are reluctant to go and change your decision rather than you prefer to stick on with your earlier decision. Now this has got something to do with your creative potential, your psychological capital etc. So let us delve deeper into this. Let us look into the problem solving as a key factor.

In an organization specifically when we look into problem solving it refers to the process of identifying and removing obstacles that prevent the organization from achieving its goals. So, when we look into problem solving, we tend to jump to conclusion that we have a particular problem and based on that problem we try to bring out solutions. Rather than this if we take a holistic understanding of problem solving as a particular process we will see that it is more of identifying and removing barriers when it comes to organization and goals. Organization has set up a certain goals in many lectures we have tried to talk about strategic intent where you try to align your personal goals with the organizational objectives. So, organization has categorically set some goals based on that goals organization is performing.

When there is any hindrance any barrier between those goals and the organizations pursuant towards those goals we find a problem. So, this is the entire process of problem and this understanding would actually give you better insights in solving the particular problem. So let us look into problem solving stage wise which essentially happens stage wise and the first and the foremost one is preparation. The second one is production and the third one is judgment. So we look deeper into the different stages different processes involved or included in the problem solving process.

Let us look into the first stage which is preparation. Preparation is all about understanding and diagnosing the problem. When you look into the particular problem there might be some things which are read and understood some things which are deeper you have to read between the lines some things are possibly hidden which might not come into the periphery in the first place. So, there could be some issues which you feel that has emerged as let us say a trade union issue as an example but there might be some background to that issue that has emerged maybe the management's decision on changing the timing or maybe the management's decision on say let us say stopping or ceasing some of the fringe benefits. So, there might be some possible background that is associated to a particular problem and this is where we have to clearly understand and diagnose the problem specifically or understand what the problem is specifically.

So, well defined and ill defined problems are there. Let us understand this situation more clearly. Let us look into a situation where you are being asked to represent your group in a team meeting in let us say in an organization high level meeting. You venture into as a representative maybe as a team lead and you go to the high-level meeting. So, there you actually get reprimanded because of reasons which you are not aware of.

Now you do your homework you tend to understand that the people who are sitting in the high level meeting were expecting some other deliverables. So, this is a situation a classic situation where the problem is ill defined. You are not aware of what exactly the problem is. Similarly we could take another example. Let us look into a sales job where you are trying hard because of the direct you receive from the higher ends that you have to improve the sales margin.

Now maybe because of that you are trying to improve the number of units sold that would be your effort. In effect what you were supposed to do was to increase the sales margin. So, you were tried to reduce some of the marketing cost or reduce some of the do some cost cutting in the back end so that the margin is increased. So, you were not clear about the problems or the problems were ill defined. You can look this or understand this in various situations in context where you are involved within your organization you might see it on a day-to-day basis.

Now let us understanding and diagnosing the problem is not that simple. Understanding and organizing the problem is a precursor when it comes to understanding the whole problem. You have to organize the issues you have to follow. Let us say the whole chain of command you have to understand how the problem emanated or how it emerged and how it transferred from one hierarchy or one form to another one level to another. So, when you are looking into understanding the problem phrasing or framing the problem helps in accurate representation.

So sometimes you are you know it is generally said that something which you can put it in writing you are more clear of. So that is what the whole point of representation of the problem means. Sometimes you are not able to convince your team members, sometimes you are not able to convince your let us say your higher authorities regarding the problem in particular. Those are the situations where you have to write down, you have to code, you have to explicitly state what the problem is that will increase your understanding. The next phase is nothing but the production phase.

So we looked into the preparation phase. Now it is a production phase where we are trying to we are attempting to generate solutions. The production was tougher but generating solutions is a bit more tougher. So, I will say that as the stages of problem solving increases the level of the difficulties also increasing side by side. So, retrieving solution from memory and solving through trial and error is the first and the foremost attempt that generally people make.

So, when you look into there are some stunning problem solvers within your organization, there are some exceptional people who are the troubleshooters in your organization. So anytime your boss feels that there is a problem that has emerged and you need a solution in no time then they are the people being referred to or they are the people whom generally people go to. In such situations you feel that why they are superior? The superiority in problem solving skills is mainly because of a sharp memory. You must have seen in one of our earlier lectures also I have underscored this point, past is the key to the present and future. So, you must have seen or observed some of these problems initially.

So one is that your experience is coming for your help. Second is that you need to have a sharp memory to recollect and understand that this has occurred initially what was the modus operandi for the solution and to replicate or to reflect on that and replicate that particular problem-solving or the method to solve that problem would be the warranted step. So, this is what generating solutions is and this is what technically makes generating solutions more difficult than actual problems in itself. So complex problems sometimes

are solved through heuristics. I hope you understand what you mean by heuristics is nothing but a general rule of thumb.

There is a general way of solving things. There could be something like let's say it could be as simple as you have to make a design basis report, a DBR. So, to produce or to prepare a DBR there are certain standard steps or you have to make a manual for making or running a particular equipment. So, there are some SOP standard operating procedures. So, there are certain methods, there are certain techniques, there are certain established ways to solve a particular problem.

So heuristics is nothing but a rule of thumb generally follow principle and the reason for use of heuristics if you ask me is to reduce the cognitive load. Many a time you feel that the problems are redundant, the problems are routine problems. So, you need not apply too much of your brain into this, you need not increase your cognitive load in that matter. You can always resort to some heuristics, some already established procedures, some protocols, some particular rule of thumb you can actually resort to. So that as package, heuristic will help you in generating solutions which are not so complex.

If you are venturing into a territory of complex problems you require complex solutions, modern solutions. So that would be a totally different case but generally when it comes to regular problems, mundane, routine problems you can always resort to heuristics as part of generating solutions. Now the third stage would be evaluating solutions. Your role does not end up in just generating solutions. You have to evaluate how effective the solutions were, judging the adequacy of a solution.

Sometimes you might be having a sense of complacency that yes I have solved this but many a time it would have been just partially solved or you would have touched upon the solution but you would not have actually given the solution. So you need to understand where exactly you stand in terms of the problem solution, in terms of solving the particular problem you have to find alternatives if you are judging that this particular solution that you have come up with is inadequate. So you have to find alternatives regarding that and you have to judge the quality of one's ideas. Basically that is a difficult task. Let me give you an example to set things in perspective.

You are a team lead and you feel that there are two individuals. One is very bright sharp from the best of the best colleges or universities he has come up and there is another person who is similar in qualification but he is not from a very top rated university but again he has displayed his business acumen or the intuitive finesse etc during the performance. So you are giving both let us say we take two names A and B, you are giving chances to both A and B. A and B who is having a very stunning reputed

background. So, what happens is that A is giving you a particular solution, B is giving you another solution. So some preconceived notions are there which is making you to take a decision in favor of A but you have to understand and make a clear judgment not based on any preconceived notions but based on a clear judgment you may sometimes feel that B's decision, the solution which B is coming up with is more practical, more pragmatic in this particular scenario because he has seen if you remember he has seen a similar consequence or similar problem in his previous company or some of his experience in the previous organization is guiding him through this or maybe there could be a possibility that he is very sharp in actually identifying those kind of problems which unlikely A is. So that is that could be or that should be the way to go ahead when you actually judge the quality of the ideas that are being generated. Now that said there is always a threat of functional fixedness. So when we are looking into basically creativity we have to understand that functional fixedness and mental set could emerge as an issue or could emerge as a solution. So it is a double-edged sword.

So the tendency to think of an object only in terms of its typical use. So many a time what happens is that we tend to have a particular mental model made that these are the resources that I am having so this is the way it has to be done. There needs to be a fresh rethinking on the possibilities that those resources can give you. There could be another way of doing it, there could be another style of doing it, there could be another you know set of people who could execute it in a more effective manner. So we have to look into alternatives, we have to change from the functional fixedness or the mental set that we are brooming, we are actually breeding.

So those should be broken and we have to take a fresh call on that. So part of the mental set is nothing but tendency for old patterns of problem solving to process. This is where the threat is when you are actually looking into solving a new problem you have to think outside the box. You cannot sometimes actually stick on to the old mental set and say that this is the particular solution for the problem because we have been doing it for years. No, sometimes there might be other dimensions that are coming into that.

Sometimes there could be other situations that are or context that is adding complexity to that particular problem. So you need to have a fresh thinking, you have to break your mental set, you have to come out of the functional fixedness and try to bring out a new solution. This creates this functional fixedness specifically if you ask me creates a problem when the same problem can no longer be solved in the previous manner. This is when you actually understand that functional fixedness has to be overcome. But there are situations when this does not happen.

There are situations when there is problem that is emerging in a subtle fashion and you are trying to solve it in the same manner which it was done earlier or previously which

again does not come out in a effective way. So please understand when you are actually looking into the problem and trying to make use of the same old solution set you are going to falter. So please understand that you have to come out of the functional fixedness and mental set when you are actually looking into problem-solving. So when you are talking about problem-solving there should be a clear rationale, there should be a clear understanding of what functional fixedness is and how it may hamper your decision making in the long run.

Now let us look into evaluation of solution and how inaccurate evaluation of solutions can be a problem.

Let us look into this particular example. Imagine an employee Sarah working on a project and presenting her findings to her manager Alex. Now Sarah has spent weeks researching and preparing a proposal for implementing a new marketing strategy for the company. During her presentation to Alex she highlights the potential benefits of this strategy backed by extensive data and market research.

However, Alex has reservations about implementing a new strategy due to the previous failed attempts at similar changes. Despite Sarah's comprehensive presentation and data supporting the viability of the new strategy Alex remains skeptical. He focuses on the few instances where similar strategies did not work in the past and dismisses Sarah's proposal the mistake made by the manager here exemplifies confirmation bias.

So, this is actually the theme which I would like to stress upon today. Sometimes we make you know it borders around escalation of commitment, it borders around you have made a particular decision and you are not willing to change even if you find some documentary evidence against that particular decision. You might find some actual snippets or actual reasoning that your decision might be flawed but still you want to stick on with that particular decision. This could be a problem in long run so please understand the solution clearly not only the problem because you had a clear understanding of the problem you were equipped to give the solution but please evaluate the solution also what you have given.

Sometimes you might feel that the evaluations are not right. Please come out of the sense of complacency and tend to make an evaluation in the clear form. So, if you actually look into problem solvers they favor the initial hypothesis and ignore contradictory information that supports alternative hypothesis or solution. So this is what I would want to stress in today's lecture. Even when we find evidence that contradicts a solution we have chosen we are apt to stick with our original hypothesis.

So this could be a problem in long run and this could actually hamper or actually cloud your decision-making process. So it occurs because rethinking of a problem that appears

to be solved already takes extra cognitive effort. As I have already mentioned it adds to your cognitive load even when using or the purpose of using or resulting to or going for heuristics was more about decreasing your individual cognitive load. So on a similar understanding we tend to reduce our cognitive effort we are apt to stick with our first solution also because of we give greater weight to subsequent information that supports our initial position than to information that is not supportive of it. Many a time we feel that we sometimes have made a decision and we are just looking into reasoning that could emerge that will support our initial position.

If we are in a position to get those reasoning that can support our decision or our initial positioning then we try to jump into that we try to hold on to that. Even when we are giving or getting quality reasons that your initial position is wrong then also we generally don't try to change it and this is where inaccurate evaluation of solution lands up as a big problem. Now let's look into creativity and problem solving. Now this is the reason why I tried to give you a better insight into problem solving because our main agenda is creativity and here I would try to link creativity and problem solving. Why do some people come up with better solutions than others? Now this is the mark of creativity.

If you remember one of the most critical points I mentioned in the previous lecture was about in creativity was about the persistence. Similarly another important aspect is divergent thinking. When you are looking into divergent thinking it is nothing but reframing the problem in a unique way and generating different approaches to the particular issue. Let's understand this in a very crude fashion you have a problem P. So you tend to come up with divergent thinking. So basically what happens is that you are actually reframing the problem in a unique way so that you are able to generate different approaches. When you are looking into divergent and convergent thinking is more about your deductive and inductive approaches. It is similar to your deductive and inductive approaches. So you have tried to reframe the whole problem as P and based on those new understanding you are trying to bring out different solutions. So this essentially acts as the divergent approach where you are looking into different approaches to the issue.

When you are looking into convergent thinking in the other hand you have the ability to produce responses that are based primarily on knowledge and logic. So you have a particular problem again and there is some certain theory, there is some certain logic that can give you a particular solution to a problem. Let's name it as K1 that's the first theory or first knowledge you are having. There is another theory K2 which also can actually give you a solution to a particular problem. There could be another theory similarly K3, there could be another K4 and similarly K5.

So here what we are seeing is specifically sort of convergent thinking, the ability to produce responses that are based primarily on knowledge and logic. So you are trying to bring different understandings, different learnings, different theories to converge it into a particular solution for a particular problem.

There is another important aspect when you look into creativity and problem solving which is cognitive complexity. So many a time in all my explanations I was very careful in reducing the cognitive load if you remember. So cognitive complexity is nothing but the preference for elaborate, intricate and complex stimuli and thinking patterns.

So we generally you know the people who are creative they don't work on simple stimuli, they don't work on simple problem solving, they work on cognitive complexity, they work on complex, elaborate, intricate stimuli. So if let's say there might be some individuals in your organization who might not be you know getting enthusiastic with some particular stimuli. Let's say they are seeing some problems, they might not be very interested in actually solving that problem because they might think that that's very trivial problem. There might be some individuals who might be thinking that okay I don't want to solve this particular problem because let's say it is simply taking my time and it does not give me a kick, it does not actually boost my morale and I don't feel like solving that particular problem. So there are or these are the individuals who are actually more creative, their essential preference is for elaborate, intricate and basically complex stimuli and thinking patterns.

When we look into activities that encourage creativity, redefining the particular problem and revisiting old projects after gap of sometimes would actually encourage creativity. Many a time what we do, we tend to take up a project, we complete it successfully, we have a stunning record on that particular project, we close the chapter, we keep it aside. Now this is a wrong practice, sometimes we as again I would like to underscore past is the key to the present and the future. So there might be a problem that is emerging and you must have already seen some tenets of that, some points of that or some dimensions of that. So you are having a readymade solution to that, the only problem is that you are not revisiting it because you are not able to recollect it, because you are not going to understand it that you are or you must have, you would have already seen that particular problem. Please try to redefine the entire problem, try to revisit the old projects which had similar problems, so that will give you the intuition, that will give you cues, that will give you insights on how to solve that particular problem.

Associative play, that is another trick ranges from let us say art classes to improv to storytelling and acting. So all these impromptu storytelling and acting are ways and means of actually encouraging creativity, so that will give you know spontaneity, that will

emerge or that will elicit a sense of spontaneity, sense of urgency and you will try to deliver it at the moment, real time. So, some creative stuff will definitely come out.

Another important aspect could be and we generally use it in research nowadays is morphological analysis. Morphological analysis is specifically you take a particular concept, dissect it into different dimensions, have a microscopic understanding of these dimensions as we technically call it as parameters and options etc. and each options are you know stuck together back and you take a macroscopic view of those parameters to understand that particular construct. The same logic, same method can be used for a problem. You tend to take that problem, dissect it into different elements, see it from microscopic angle, then try to combine it together, have a macroscopic solution for that. Now this is yet again another approach which I believe can boost the creativity within an individual or an activity that can actually ensure that the creativity is not lost or can be actually used as a training program for creative people or to increase the creativity.

Another important aspect could be cross-pollination. When you are looking into cross pollination what we are doing is people from different areas of organization exchange ideas. Sometimes we deliberately put cross functional teams or cross functional groups for this matter. Sometimes you might not be able to solve a particular problem with your own expertise or your domain expertise. You might be a great expert in your domain but sometimes a problem might warrant something which is more intricate, more you know triggering or more complex. So you might need a hand holding, you might need a support from other departments, other functional departments which or who can help you in redefining, reframing the problem.

A clear understanding as you have already seen would actually give you to contribute a better solution and if you evaluate the better solution as a high-quality solution then there is nothing like that you are done or you are being termed as creative. So please understand these are some of the activities which I feel that can encourage creativity specifically.

Now coming to the fag end of this lecture how to be a better thinker? I thought I will add this particular slide also so that this becomes a food for thought for many of them who are attending this lecture from industry. How to be better thinkers? First use sub goals if you have looked into my previous slide or have given due thought into my previous slide I have introduced concepts like morphological analysis. What we generally do in those concepts or those techniques is to split that particular goal into sub goals.

Every single objective looks very complex, very difficult to achieve. You take any objective in your organization, your boss comes and tells you it has to be done by 5 pm it will never be an easy task, it will never be an easy objective, it always seems to be a

complex task. So what you have to do is you have to dissect it into smaller fragments use sub goals maybe you can achieve something by 10 o'clock another thing by 12 o'clock similarly you work on increments and finally when it is 5 o'clock is your deadline you can actually combine everything and make it into a fine product. So that is why using sub goals becomes a first and the foremost aspect on how to be a better thinker.

Another important aspect could be adopt a critical perspective. You know don't always go with the flow sometimes try to swim against the tide this will give you some idea, some critical perspective somebody is trying to criticize you take that as a positive criticism.

You know accept your critics try to you know you need not be bogged down by the critics you need not be demotivated by the critics I am not intending to tell that but there are people who are not even ready or able to take positive criticism this the inability to take a positive feedback would actually be detrimental for you in the long run. So please adopt a critical perspective you are you have made a thought or some thought has come to you try to be critical about that, try to think what happens if this is not the case try to contradict it from a reverse scenario, try to be a devil's advocate in those situations. So that will enable you that will enhance your thinking capacity specifically. Consider the opposite which is again an extension of what I would like to mention here. Try to bring in a different perspective be a devil's advocate ok don't always see the rosy side don't always see that this is what I am going to propose and this is the finest solutions that I can come off please try to see what happens if this can also go wrong or what would happen if this dimension is not working and I will certainly falter in this particular

So consider the opposite use analogies for that, try to relate it with issues that have already happened, try to relate with possible references that have happened in the organization already there might be some readymade solutions to that already there might be heuristics developed for that already there might be rules of thumb for available for that please try to make use of those resources also. Think divergently as I have clearly mentioned here sometimes the problem solving sometimes to be better thinker you need to have a divergent thinking possibility. So you from the same for the same problem you must be thinking it from different dimensions you have to pull out different possible solutions then you have to work out evaluate on the alternatives evaluate on the possible solutions then come out for a particular. So, divergent plus convergent thinking would actually give you or enhance your thinking capacity will make you essentially a better thinker use heuristics as I have already mentioned there might be some availability of rules of thumb that already exist many a time I repeat problems might not be you know very much complex. So you try to use heuristics try to see what the problem is there might be a solution already established to that try to make use of that particular solution and finally experiment with various solutions.

Do not just resort to a particular solution you must understand that there could be a better solution do not be complacent come out of the complacency and try to be open to experiment with various other solutions.

So that note will try to end this lecture I would just conclude with one particular key take away that you need to have when you are looking into creativity and specifically problem solving please understand that problems have to be understood clearly. The first fault we make is we tend to rush towards a particular problem please take a step back try to understand dissect the topic and please see the different dimensions in which the problem has emerged then you can actually put solutions from those dimensions and come out with a solution for that. Once you have come out with a solution do not stop there as I have already mentioned please try to evaluate your solution judge your solution sometimes you might be able to bring a better solution take the contrary take the opposite be a devil's advocate try to bring in different solutions for that something which might not be your routine solution and moreover when you are trying to develop solutions please remember past is the key to the present and future there might be some issue which already would have happened there might be some problem which would have already happened and there might be some individual who might have already solved it, it might be you also please try to sharpen your memory recollect your old cases go through your old files might be there might be a possibility that some heuristics might be you know coming your way to help you out so please resort to that don't increase your cognitive load so that will make you a better thinker.

Thank you for listening to me patiently we will see with next class on creativity in the next class till then take care bye-bye.