

**Organizational Design Change and Transformation**  
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**Indian Institute of Technology, Kharagpur**

**Module - 11**  
**Lecture - 55**  
**Creativity and Related Issues**

Welcome back to the sessions on Innovation, Creativity. We are now on week 11 of the course on Organizational Design, Change and Transformation. So, in this lecture session we are going to discuss on Creativity and Related Issues of creativity.

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**CONCEPTS COVERED**

- Creative behavior,
- Creativity across different paradigms,
- Relation between creativity and intelligence,
- Creativity and teamwork,
- How to enhance creativity in team work,
- Techniques of creativity enhancing in team work,
- Environmental influence on creativity and
- Measuring creativity

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So, let us see what are the concepts covered. Here in this session, we are going to discuss on creative behavior, creativity across different paradigms, relation between creativity and intelligence, creativity and teamwork, how to enhance creativity in a teamwork, techniques of

creativity enhancing in teamwork, environmental influence on creativity, and measuring creativity.

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**Creative Behaviour**

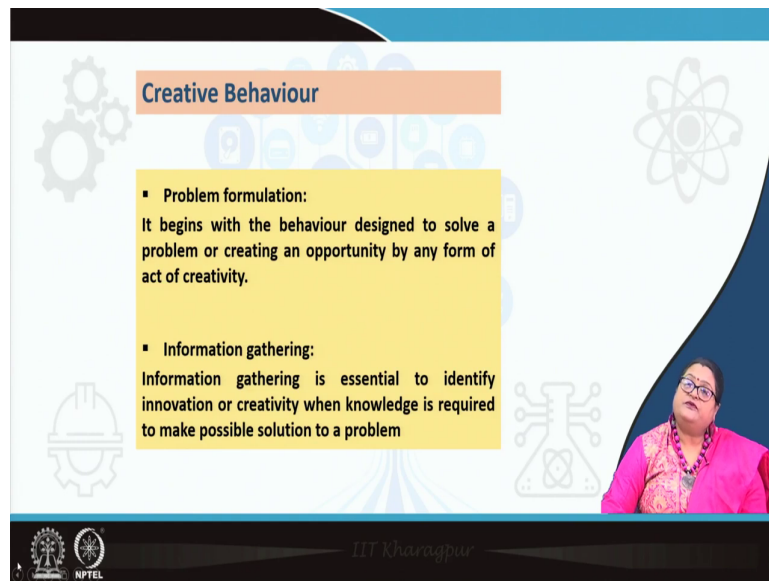
Robbins and Judge have proposed four steps of creative behaviour such as

- Problem formulation
- Information gathering
- Idea generation
- Idea evaluation

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So, what is a creative behavior? Robbins and Judge are proposed four steps of creative behavior such as - problem formulation, information gathering, idea generation and idea evaluation.

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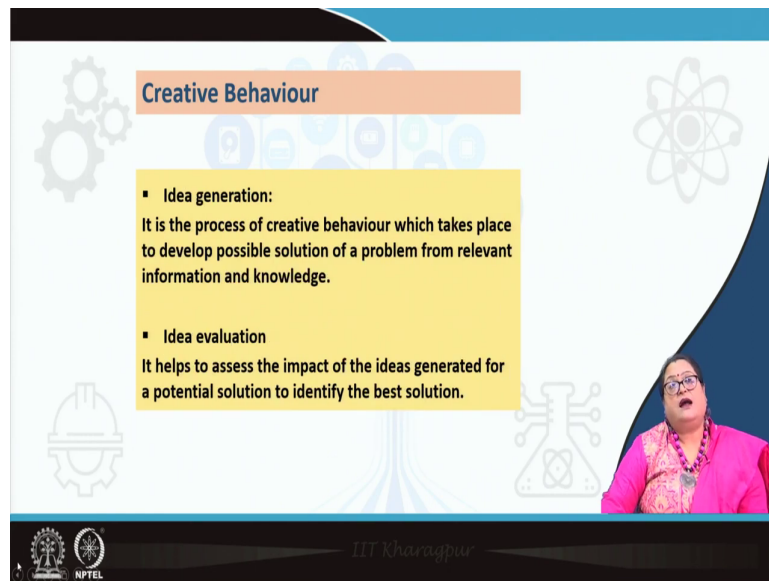
### Creative Behaviour

- **Problem formulation:**  
It begins with the behaviour designed to solve a problem or creating an opportunity by any form of act of creativity.
- **Information gathering:**  
Information gathering is essential to identify innovation or creativity when knowledge is required to make possible solution to a problem

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Problem formulation: It begins with the behavior designed to solve a problem or creating an opportunity by any form of act of creativity. Information gathering: Information gathering is essential to identify innovation or creativity when knowledge is required to make possible solution to a problem.

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**Creative Behaviour**

- **Idea generation:**  
It is the process of creative behaviour which takes place to develop possible solution of a problem from relevant information and knowledge.
- **Idea evaluation**  
It helps to assess the impact of the ideas generated for a potential solution to identify the best solution.

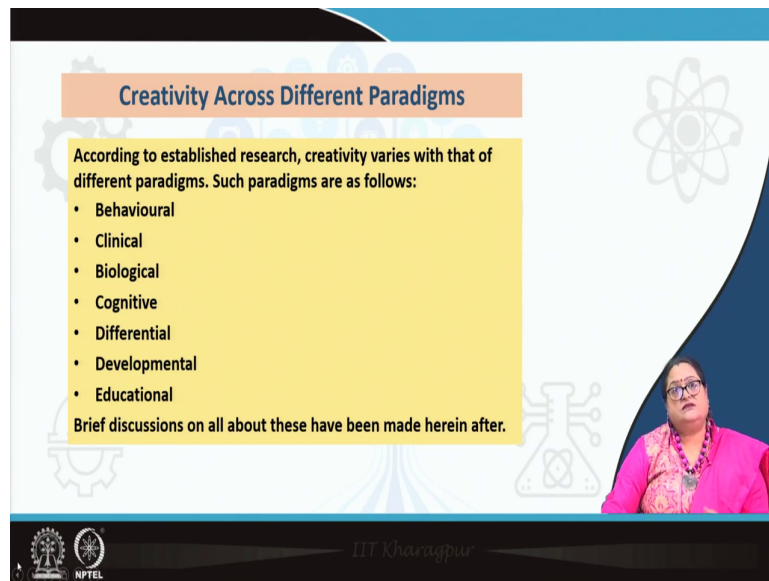
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Idea generation: It is the process of creative behavior which takes place to develop possible solution of a problem from relevant information and knowledge. Idea evaluation: It helps to assess the impact of ideas generated for a potential solution to identify the best solution.



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**Creativity Across Different Paradigms**

According to established research, creativity varies with that of different paradigms. Such paradigms are as follows:

- Behavioural
- Clinical
- Biological
- Cognitive
- Differential
- Developmental
- Educational

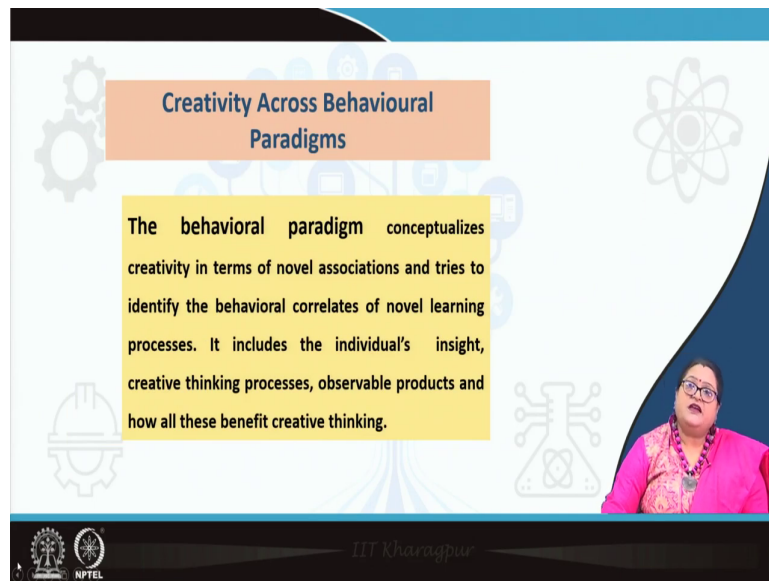
Brief discussions on all about these have been made herein after.

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What is the creativity across different paradigms? According to established research, creativity varies with that of the different paradigms. Such paradigms are as follows behavioral, clinical, biological, cognitive, differential, developmental and educational. A brief discussion on all of this will be done like in the upcoming session, like upcoming discussions now.

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**Creativity Across Behavioural Paradigms**

The behavioral paradigm conceptualizes creativity in terms of novel associations and tries to identify the behavioral correlates of novel learning processes. It includes the individual's insight, creative thinking processes, observable products and how all these benefit creative thinking.

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The behavioral paradigm conceptualizes that creativity in terms of novel associations and tries to identify the behavioral correlates of novel learning processes. It includes the individuals, it includes the individual's insight, creative thinking processes, observable products and how all these like benefits creative thinking.

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**Creativity Biological Paradigms**

It is on the other hand, to look at the physiological correlates of creative thinking and how these processes may be manifested at the level of evolutionary function of brain, its structure and neural processes. Recent study indicates that individual creativity requires both hemispheres to be involved

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Then the creativity in biological paradigms, it is the it looks into the physiological correlates of creative thinking and how these processes may be manifested at the level of evolutionary function of brain, its structure and neural processes. Recent study indicates that individual creativity requires both hemispheres to be involved.

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**Creativity Across Clinical Paradigms**

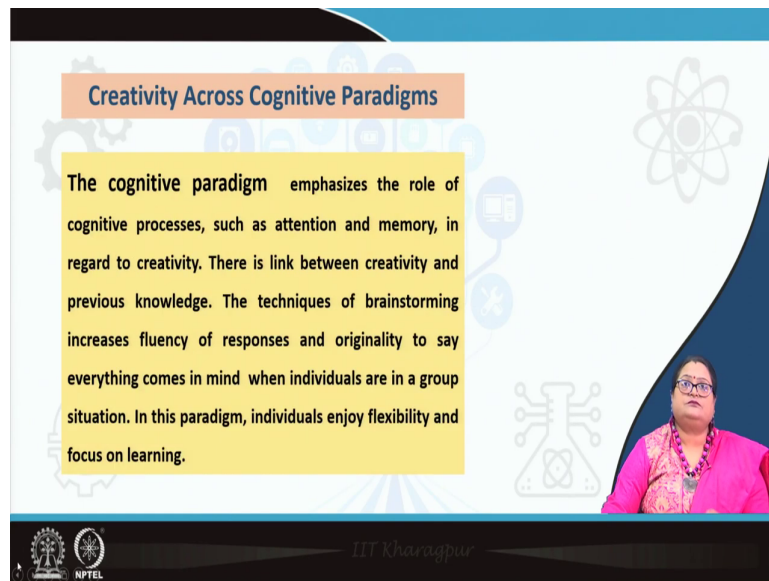
The clinical paradigm looks at the extent to which creativity is associated with abnormal behavior, either as a cause or consequence of psychological disorders. It is in other terms defined as 'mad genius.' psychologists prescribe a connection between insanity and artistic creativity. There is a relation between mental disorder and creativity.

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The slide features a light blue background with various icons including gears, a brain, a microscope, and a person. A woman in a pink top is visible in the bottom right corner, likely the presenter.

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**Creativity Across Cognitive Paradigms**

The cognitive paradigm emphasizes the role of cognitive processes, such as attention and memory, in regard to creativity. There is link between creativity and previous knowledge. The techniques of brainstorming increases fluency of responses and originality to say everything comes in mind when individuals are in a group situation. In this paradigm, individuals enjoy flexibility and focus on learning.

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Creativity across cognitive paradigms: The cognitive paradigm emphasizes the role of cognitive processes, such as attention and memory, in regard to creativity. There is a link between creativity and previous knowledge. The techniques of brainstorming increases the fluency of responses and originality to say everything comes in mind when individuals are in group situations. In this paradigm, individuals enjoy flexibility and focus on learning.

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**Creativity Across Development Paradigms**

The developmental approach makes an attempt to identify changes in creativity throughout the lifespan and how certain characteristics of the family may affect levels of creativity. Literature has shown that middle-born children tend to be more rebellious than their sibling and thus, they are likely to be more creative attitudes. Also, the gender of the individual is associated with creativity.

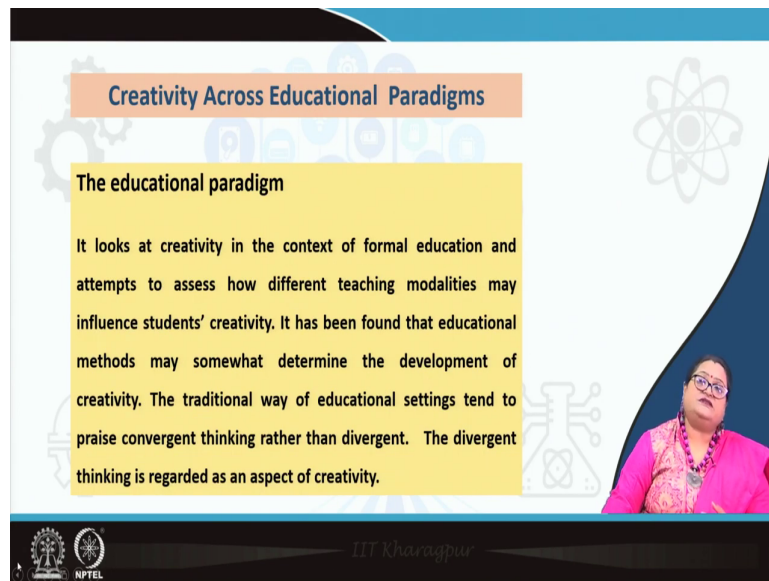
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The slide features a blue and white background with faint icons of gears, a lightbulb, and a molecular structure. A woman in a pink top is visible in a video inset on the right side of the slide.

Creativity across development paradigms: The developmental approach makes an attempt to identify changes in creativity throughout the lifespan and how certain characteristics of the family may affect levels of creativity. Literature has shown that middle-born children tend to be more rebellious than their sibling and thus they are likely to be having more creative attitudes. So, the gender also the gender of the individual is associated with creativity.

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**Creativity Across Educational Paradigms**

**The educational paradigm**

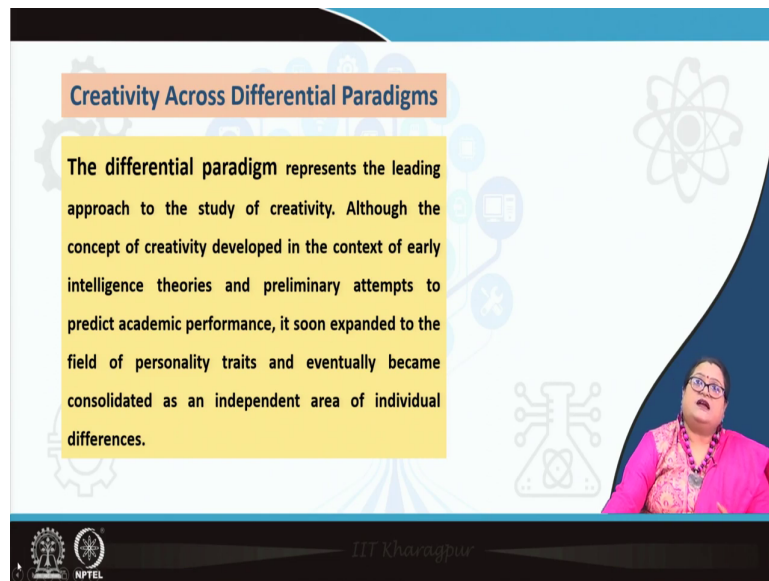
It looks at creativity in the context of formal education and attempts to assess how different teaching modalities may influence students' creativity. It has been found that educational methods may somewhat determine the development of creativity. The traditional way of educational settings tend to praise convergent thinking rather than divergent. The divergent thinking is regarded as an aspect of creativity.

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Creativity across educational paradigms: The educational paradigm - it looks at creativity in the context of formal education and attempts to assess how different teaching modalities may influence students' creativity. It has been found that educational methods may somewhat determine the development of creativity. The traditional ways of educational settings tend to praise convergent thinking rather than the divergent thinking. Divergent thinking is regarded as an aspect of creativity.

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**Creativity Across Differential Paradigms**

The differential paradigm represents the leading approach to the study of creativity. Although the concept of creativity developed in the context of early intelligence theories and preliminary attempts to predict academic performance, it soon expanded to the field of personality traits and eventually became consolidated as an independent area of individual differences.

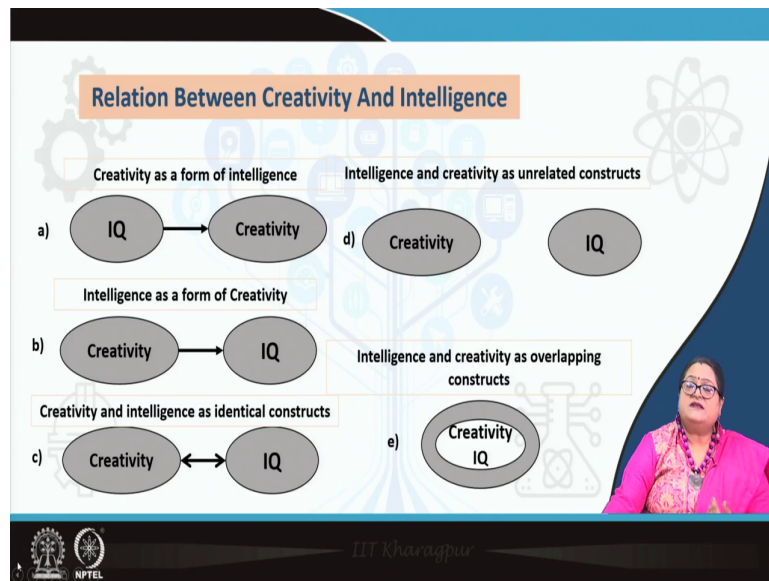
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Creativity across differential paradigm: The differential paradigm represents the leading approach to the study of creativity. Although the concept of creativity developed in the context of early intelligence theories and preliminary attempts to predict academic performance, it soon expanded to the field of personality traits and eventually become consolidated as an independent area of individual differences.



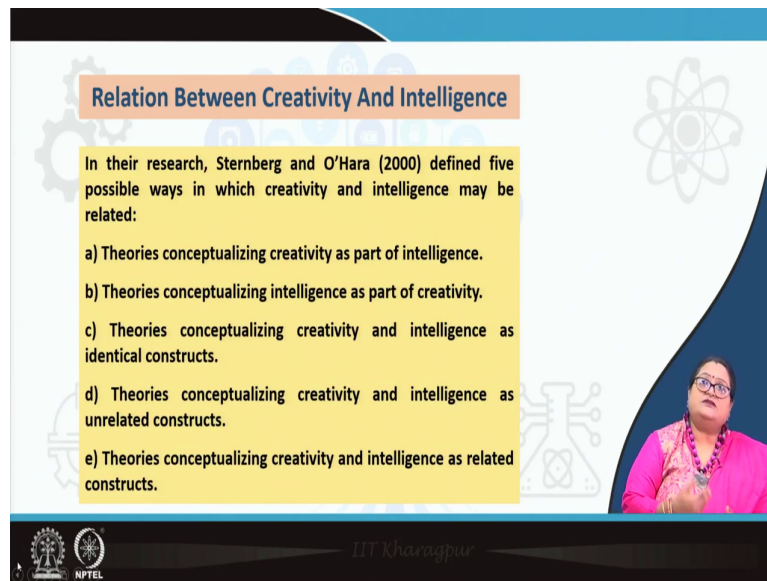
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Now, we will see what is the relationship between creativity and intelligence. Like there have been different like viewpoints of what is the relationship between creativity and intelligence. In some researches, it has been defined as the creativity as a form of intelligence. In some researches, it is defined as like intelligence as a form of creativity.

While other group of researches defined creativity and intelligence as identical constructs, still some other group refer intelligence and creativity to be unrelated constructs, where we can see, but now we stand we like we understand like intelligence and creativity are overlapping constructs and where intelligence itself a multi-dimensional or multifaceted concept.

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**Relation Between Creativity And Intelligence**

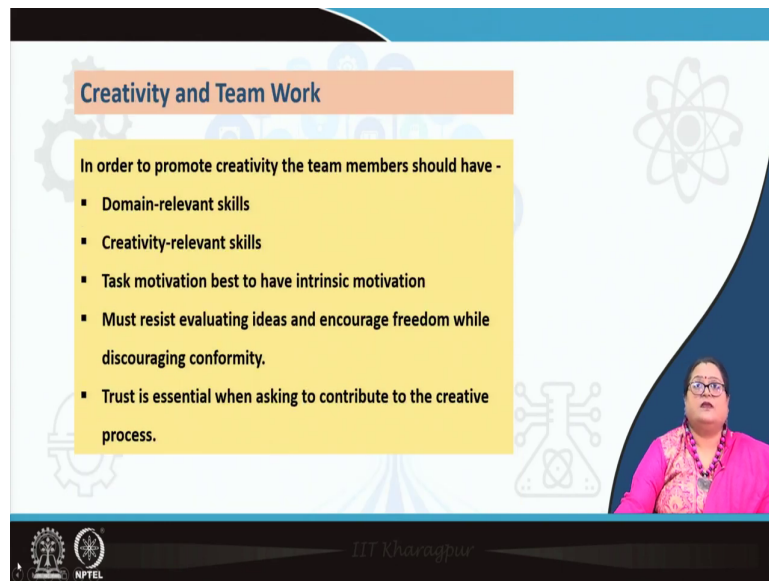
In their research, Sternberg and O'Hara (2000) defined five possible ways in which creativity and intelligence may be related:

- Theories conceptualizing creativity as part of intelligence.
- Theories conceptualizing intelligence as part of creativity.
- Theories conceptualizing creativity and intelligence as identical constructs.
- Theories conceptualizing creativity and intelligence as unrelated constructs.
- Theories conceptualizing creativity and intelligence as related constructs.

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So, we will try to see this again in details. In their research, Sternberg and O'Hara defined five possible means in which creativity and intelligence may be related. Theories conceptualizing creativity as a part of intelligence, theories conceptualizing intelligence as a part of creativity, theories conceptualizing creativity and intelligence as identical constructs means they are same, theories conceptualizing creativity and intelligence as unrelated concepts or constructs and theory is conceptualizing creativity and intelligence as like overlapping constructs.

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**Creativity and Team Work**

In order to promote creativity the team members should have -

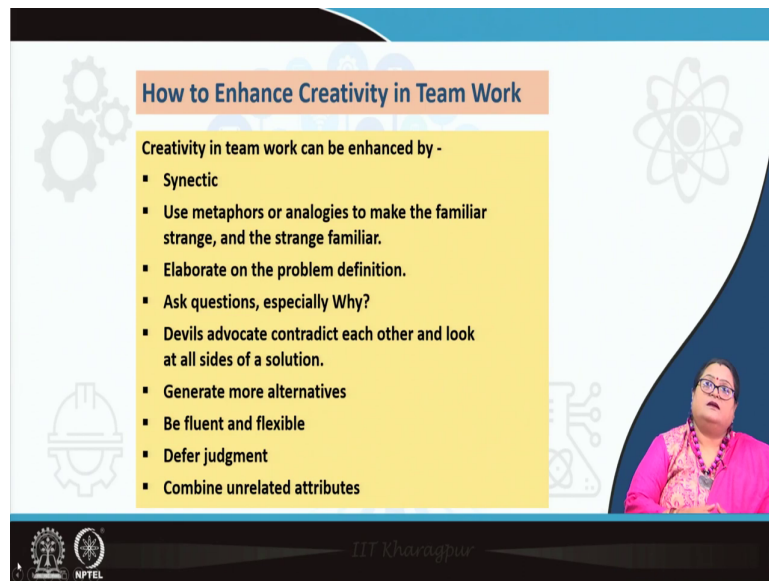
- Domain-relevant skills
- Creativity-relevant skills
- Task motivation best to have intrinsic motivation
- Must resist evaluating ideas and encourage freedom while discouraging conformity.
- Trust is essential when asking to contribute to the creative process.

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Now, we are going to discuss the importance of creativity in teamwork. In order to promote creativity, the team members should have domain relevant skills, creativity relevant skills, task motivation best to have, it is best to have increasing motivation. It must resist evaluating ideas and encourage freedom while discouraging conformity. Trust is essential when asking to contribute to the creative process.

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**How to Enhance Creativity in Team Work**

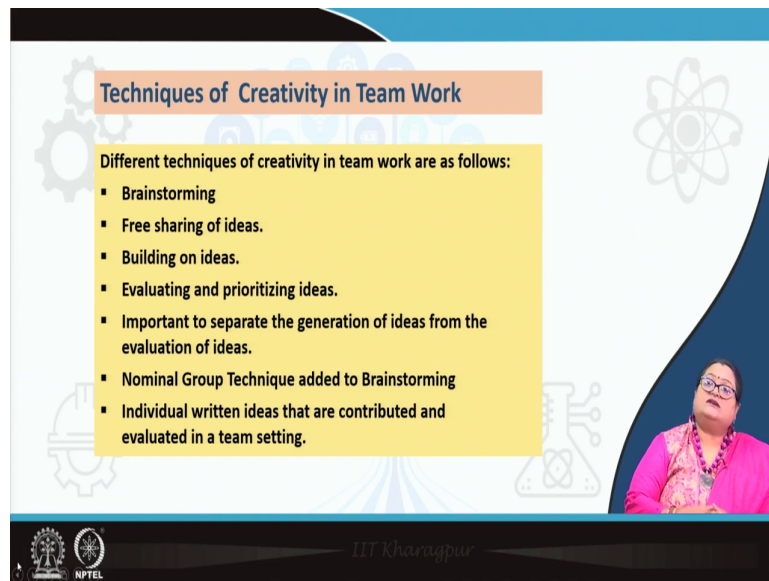
Creativity in team work can be enhanced by -

- Synectic
- Use metaphors or analogies to make the familiar strange, and the strange familiar.
- Elaborate on the problem definition.
- Ask questions, especially Why?
- Devils advocate contradict each other and look at all sides of a solution.
- Generate more alternatives
- Be fluent and flexible
- Defer judgment
- Combine unrelated attributes

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There are several ways to increase creativity in teamwork; it can be enhanced by –synaptic. Use metaphors or analogies to make the familiar, strange and strange familiar elaborate on the problem definition. Ask questions, specially why? Devil’s advocate, contradict each other and look at this all sides of the solution, generate more alternatives, be fluent and flexible, defer judgment, combine unrelated attributes.

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**Techniques of Creativity in Team Work**

Different techniques of creativity in team work are as follows:

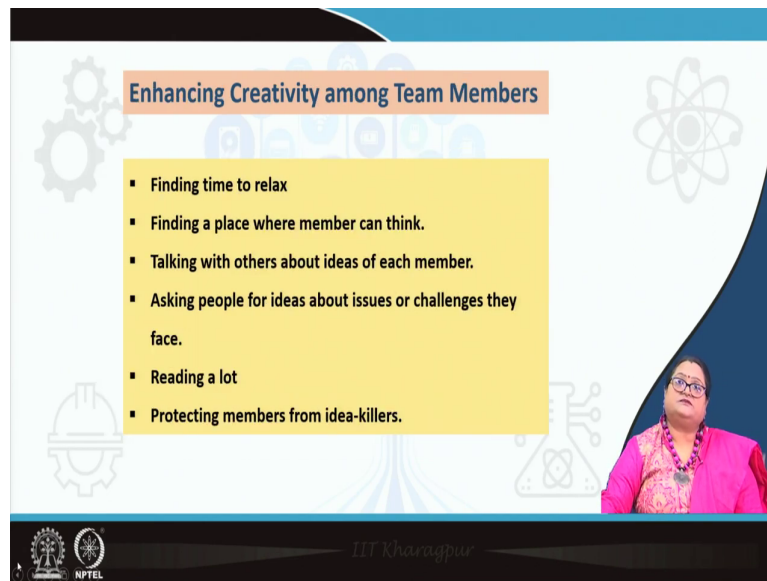
- Brainstorming
- Free sharing of ideas.
- Building on ideas.
- Evaluating and prioritizing ideas.
- Important to separate the generation of ideas from the evaluation of ideas.
- Nominal Group Technique added to Brainstorming
- Individual written ideas that are contributed and evaluated in a team setting.

The slide features a blue and white background with decorative icons of gears, a brain, and a molecular structure. A presenter in a pink top is visible in the bottom right corner. Logos for IIT Kharagpur and NPTEL are at the bottom.

Now, what are some of the techniques of creativity in teamwork? Different techniques of creativity in teamwork are as follows - like brainstorming, then free sharing of ideas, building on ideas, evaluating and prioritizing ideas. Important it is important to separate the generation of ideas from the evaluation of ideas.

Nominal group technique added to brainstorming, to arrive at particular solutions, individual written test ideas that are contributed and evaluated in team setting. So, these are some of the techniques of creativity in teamwork.

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**Enhancing Creativity among Team Members**

- Finding time to relax
- Finding a place where member can think.
- Talking with others about ideas of each member.
- Asking people for ideas about issues or challenges they face.
- Reading a lot
- Protecting members from idea-killers.

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Now, how do we enhance creativity in team members? We need to find a time to relax, finding a place where members can think, talking with others about ideas about of each member, asking people for ideas about issues or challenges they face, reading a lot, protecting members from idea killers.

So, now when we have we can understand like, activity based designs of organizations are very important where they can find, where people can find a time to relax and they can think, they can share their ideas. So, asking people for ideas about issues or challenges they face, reading a lot so, when having a trusting environment, open environment, so respectful environment. These are some of the ways in which creativity can be enhanced among team members in the organization.

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The slide features a title 'Environmental Influence on Creativity' in a blue box. Below it, a yellow box contains a list of points. The speaker, a woman in a pink jacket, is visible in the bottom right corner of the slide frame. The background includes faint icons of gears, a lightbulb, and a molecular structure.

### Environmental Influence on Creativity

- If creativity is valued in the cultural setting, motivation to be creative increases
- When practical constraints are put on creative thinking, low creativity
  - Practical evaluation of creative ideas occurs early – restricts the ideas that can be produced
  - Thinking about completely impractical ideas can lead to less impractical ideas which can lead to practical innovative ideas
  - Individual production of ideas produce more creative ideas than group production

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We will now look into some of the environmental influence on creativity. If creativity is valued in a cultural setting, motivation to be creative, its increases - When practical constraints are put on creative thinking, it results in low creativity. Practical evaluation of creative ideas occurs early and it can restrict the ideas that can be produced. So, that we were discussing about the idea killers.

So, before it is trying to flourish, before it is trying able to bloom, it is restricted. So, thinking about completely impractical ideas can lead to less impractical ideas, which can lead to practical innovative ideas. Individual production of ideas produce more creative ideas than group production. So, if each one is thinking separately and then you collate and try to discuss cross-pollinate, then you get more creative ideas and more creative solutions to a particular problem.

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The slide features a title 'Measuring the Creativity' in an orange box. Below it, a yellow box contains three bullet points. To the right, a video feed shows a woman in a pink top. The background has faint icons of gears, an atom, a hard hat, and a beaker. Logos for IIT Kharagpur and NPTEL are at the bottom.

### Measuring the Creativity

- ✓ Most people know who a creative person is, but creativity is difficult to measure
- ✓ Frequent procedure involves divergent thinking – How many uses for a brick can you think of?
- ✓ Problem is that evaluating possible solutions just as important as generating

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Now, how to measure creativity? Most people know like who a creative person is, but creativity is difficult to measure. Frequent procedures involve use of divergent thinking like example, how many uses of a brick can you think of? And problem is that evaluating possible solution is just as important as generating it. We will now look into some of the ways of measuring creativity because here we understand it is very important to measure creativity.



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**Different Ways of Measuring Creativity**

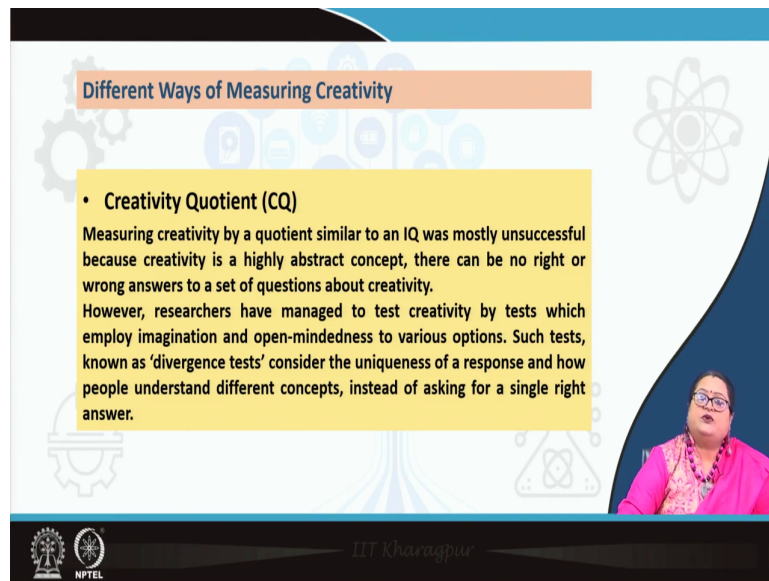
There are three ways measuring creativity as identified by different scholars. They are

- Creativity Quotient
- Psychometrics, and
- Social personality approach.

The slide features a blue and white background with various icons including a gear, an atom, a hard hat, and a circuit board. A small inset video shows a woman in a pink top. The bottom of the slide includes the IIT Kharagpur and NPTEL logos.

There are different ways of measuring creativity. We will discuss here three important ways which have been identified by different scholars like creativity quotient, psychometrics and social personality approach.

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**Different Ways of Measuring Creativity**

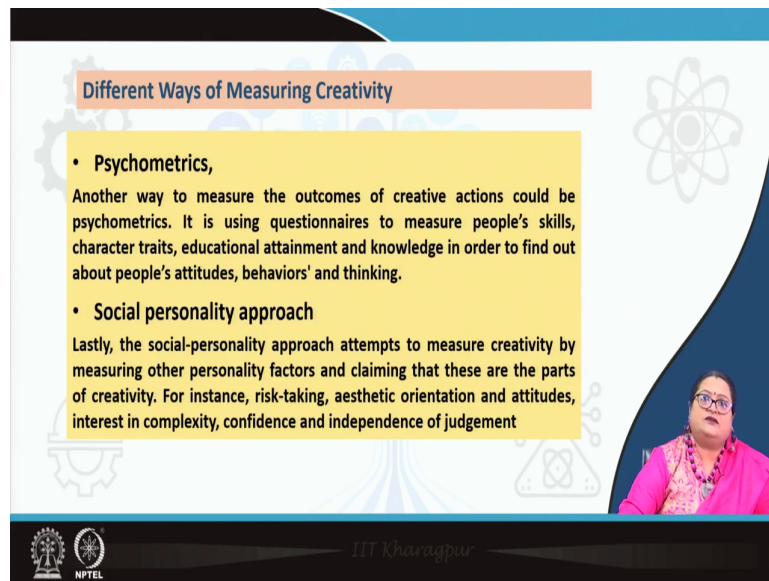
- **Creativity Quotient (CQ)**  
Measuring creativity by a quotient similar to an IQ was mostly unsuccessful because creativity is a highly abstract concept, there can be no right or wrong answers to a set of questions about creativity.  
However, researchers have managed to test creativity by tests which employ imagination and open-mindedness to various options. Such tests, known as 'divergence tests' consider the uniqueness of a response and how people understand different concepts, instead of asking for a single right answer.

The slide features a background with various icons including gears, a lightbulb, and a network diagram. A video inset in the bottom right corner shows a woman in a pink top speaking. The footer includes the IIT Kharagpur and NPTEL logos.

Creativity quotient: Measuring creativity by a quotient similar to an IQ was mostly unsuccessful because creativity is a high abstract concept, there can be no right or wrong answers to set of questions about creativity.

However, researchers have managed to test creativity by tests which employ imagination and open-mindedness to various options. Such tests, known as 'divergence tests' consider the uniqueness of a response and how people understand different concepts instead of asking for a single right answer.

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**Different Ways of Measuring Creativity**

- **Psychometrics,**  
Another way to measure the outcomes of creative actions could be psychometrics. It is using questionnaires to measure people's skills, character traits, educational attainment and knowledge in order to find out about people's attitudes, behaviors' and thinking.
- **Social personality approach**  
Lastly, the social-personality approach attempts to measure creativity by measuring other personality factors and claiming that these are the parts of creativity. For instance, risk-taking, aesthetic orientation and attitudes, interest in complexity, confidence and independence of judgement

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Psychometrics: Another way to measure the outcomes of creative actions could be psychometrics. It is using questionnaires to measure people's skill, character traits and educational attainment and knowledge in order to find out about people's attitudes, behaviors and thinking.

Social personality approach: Lastly, the social personality approach attempts to measure creativity by measuring other personality factors and claiming that these are the parts of creativity. For instance, risk-taking, aesthetic orientation and attitudes, interest in complexity, confidence and independence of judgment.

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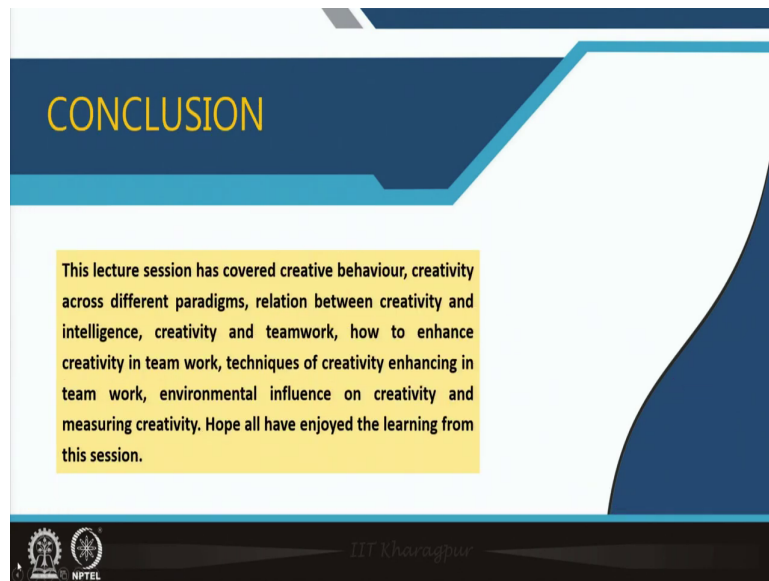
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We have used these references for developing this lecture path.

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So, this lecture session has covered a creative behavior, creativity across different paradigms, relation between creativity and intelligence, creativity and teamwork, how to enhance creativity in teamwork, techniques of creativity, enhancing in teamwork, environmental influence on creativity and measuring creativity.

Hope all have enjoyed the learning from this session. We will be meeting you next in like week 12 with some more learning on organizational turnaround organizational transformation and some of the intervention techniques like how to like give different interventions or whether it is a technological intervention, H A related interventions and the different nature of like model the different nature of transformations happening.

So, what like how to go about all these things so, that we arrive at something which is a new transformed organizations, the techniques used for it, the barriers faced for it. So, we will be

going through these learning's about mainly about the interventions during the transformations and turnaround situations while we are on the week 12 where we are discussing on these issues.

Till then thank you, happy reading.