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(SEWA)

SKILL ENHANCEMENT

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ACCESSIBILITY

JAGAT GURU NANAK DEV
PUNJAB STATE OPEN UNIVERSITY, PATIALA
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CERTIFICATE COURSE

IN

**CREATIVITY AND INNOVATION IN
SCHOOL EDUCATION**

CISE-3

**BUILDING AND SUSTAINING INNOVATION
ORGANISATION**

Head Quarter: C/28, The Lower Mall, Patiala-147001
WEBSITE: www.psou.ac.in

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAININ INNOVATIVE ORGANISATION (CISE-3)

UNIT 1: INNOVATION AND CREATIVITY IN ORGANIZATIONS

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1.1 Learning Objectives

After the completion of the unit, the students will be able to

- acquaint themselves with the concept of creativity.
- be sensitized towards the importance of creativity in an organization.
- enumerate the characteristics of a creative person.
- analyze factors responsible for fostering creativity.
- explain the concept of creative swiping.
- associate strategies of creativity like creative swiping in an organization.

- imbibe in themselves the understanding of various ways to stimulate creativity.
- foster creativity and innovation skills in themselves through simple techniques.
- enlist factors which kill creativity at individual and organizational level.
- recognize the role of innovation and creativity in an organization.

1.2 Introduction

Innovation and Creativity are the pivots of an organization. This unit focuses on inculcating creativity at the individual level further broadening into the level of an organization. The sparks that cause an organization to thrive consistently are innovation and creativity. The educational field has been incomplete and static without innovation as well as creativity. Both the terms have their own importance. The teachers have to take such initiatives so as to bring out and inculcate creativity among children. An innovative teacher can spark off the thoughts of the students to give wings to their dreams. In the education system, a teacher can make or mar the future of the students by psychologically strengthening or weakening them . A teacher can be an inspiration for the students.

There are many strategies which can encourage innovation and creativity in an organization, a company, a factory, a school, a college or a university. On the contrary, some factors act as barriers. In this unit, the term creative swiping and its significance in today's world is also explained. The factors responsible for fostering and killing creativity have also been discussed in this unit.

1.3 Creativity

The English word 'creativity' comes from the Latin term 'creare' , which means "to create, make". It means the ability to produce new ideas or things using skill and imagination. Creativity involves originality and a person who exhibits unique and original performances over a period of time can be called a creative person. Creativity is necessary for thinking in an inventive manner. In most of the educational environments, creativity is underappreciated. Children tend to be naturally creative but sometimes due to authoritarian system of education, their creativity gets dampened. The child who possesses creativity by birth is called a child prodigy. The discovery and development of creative genius among the students should be of the fore most importance in our education system. Hence education system has a great responsibility to children and society

to inculcate creativity so that it is manifested to the maximum of the child's potential leading to useful citizens of our country and finally contribution to the growth and progress of our nation. Creativity is defined as a goal directed thinking which is rare, unique and advantageous. It is considered to be the most sophisticated and advanced thought process. Such a thought process rejects the earlier recognized notions and organizes the vague situation in new and comprehensible manner. Innovation turns creativity into practice. According to Cambridge Learner's Dictionary, creativity is a phenomenon whereby something somehow new and valuable is formed. In the words of Guilford, creativity is the capacity to produce ideas that are both new and useful. Spearman says that creativity is the power of human mind to create new content by transforming relations and generating new correlates.

1.4 Organization

An organization refers to a group of people working in a structured manner with a particular purpose. It may be an institution, an association, a company, a factory or even a school, college, university etc. Organization is a means to bring the plan into being. Organization is directly associated with designing and directing energy of the people. It is a medium, through which goals and the objectives enlisted by the organization are achieved. In any organization, many factors play their roles for a given endeavor. These factors may be human or non-human. Human factors involve the boss, the employees and all the human resources concerned directly or indirectly with that organization whereas non-human resources may include factors such as materials, place, infrastructure etc.

An organization is mainly concerned with a common goal having a clear vision and mission towards which the human and non-human resources strive for. An organization works in a cooperative relationship. An organization is characterized by division of labor among its employees. The quality of an organization is managed and analyzed from time to time through SWOT Analysis i.e. Strengths, Weaknesses, Opportunities and Threats.

1.5 Traits of a Creative Individual

Torrance has summarized personality traits of a highly creative person. His list includes many characteristics but one thing that should be clarified here is that nobody has all the characteristics to the same degree but creative person may possess various characteristics in varying degrees. Creativity is the main source of emergence and development of human culture. The present day scientific and technological development has been made possible only through creativity. It was only through creativity that humans could invent the wheel.

A creative person is not satisfied with the routine pattern of life and day to day activities. He or she is always into bringing out something new. It's because of the creativity and diversity that humans have progressed and could get all the facilities that we enjoy today.

Following are the characteristics / qualities generally possessed by a creative person:

1. **Desire to excel:** A creative person is never satisfied with being in the herd. He is always driving and making efforts to excel and be a black sheep among the herd of white ones. A creative person is never content with his own performance.
2. **Strong determination:** A creative person is always determined and doesn't succumb to the pressures emotionally. He has a strong will power which excels him further into his path of expression of creativity.
3. **Critic:** The creative person always looks at his own work with a critical eye. Here he always finds it in his own work, he finds for us in his own work and always working on giving his 100% into his performance giving the product an ideal look.
4. **Industrious and diligent:** Creativity demands diligence and industriousness. Undoubtedly high IQ is associated with creativity but along with that the creative persons are always working harder and harder expanding their limits to make their product the best.
5. **Versatile:** A creative person is quite flexible and hates rigidity. An individual who is creative, adjusts as per circumstances and does not stay very much rigid. Moreover, a creative person has the tendency to tilt himself towards equilibrium or balance.
6. **Visionary:** Creative individual has a bigger vision that is he goes for a Gestalt view of the whole scenario and tenaciously works towards that. He is thorough with the aim and is aware of the persistence of the work to achieve that aim. He has the courage to take

risk and speculate about the results and consequences. He is also sensitive towards the environment around him.

7. **Courageous:** Creative person is courageous enough to take initiatives. He is not scared of failures and believes in failures as pillars of success. The risk taking ability makes him reach for the unbelievable success goals.
8. **Constructive in criticism:** A creative person takes his criticism in a very constructive manner, with open-mindedness and is not negative. On the other hand, he transforms the criticisms of critical feedback into his strengths by removing his weaknesses. A creative person self-introspects very frequently and analyses his strengths and weaknesses very deeply. He follows self-discipline too.
9. **Intellectual playfulness:** A creative person does not get satisfied easily with the output of his work. He goes into the details and elaboration. He is always curious to know more and implement the acquired knowledge further. His humorous nature causes him to deal with intellect in a playful and humorous manner.
10. **Problem-solving:** The curiosity of a creative person propels him in the direction of solving problems. He is self-disciplined, organised and well versed with his field of creativity.
11. **Self-motivation:** The creative person is a kind of one man army and always keeps on extending his limits. He is solitude loving and spends time alone to give shape to his ideas.
12. **Multidisciplinarity:** Creativity cannot be bound in only one area. Rather a creative person shows creativity in multidisciplinary fields.

A creative individual is an asset to an organization. The organization should facilitate creativity of its employees as it will lift the organization high on the path of growth.

1.6 Integrating Creativity into Organization

There have been found to be many factors responsible for the success of an organization. A lot of research has also been done in this direction. The researchers and investigators have always been interested in quenching their unsatisfied desire to unmask the various criteria responsible for that. Creative individuals make a progressive organization.

In NCF-2005 i.e. National Curriculum Framework -2005, it has been stated that schools should become creative learning centers and teacher to be the facilitator of learning. There is a dire need for the teacher to be a facilitator so as to construct meaningful knowledge among the students as per NCF-2005. It considers the capability of an institution to innovate and create for the pursuit of excellence as the pre-requisite. Obviously high quality inputs are required for that. More emphasis on the creativity and innovation of teachers through good planning on behalf of the organization is emphasized.

The organization must focus on various aspects, a few of which have been enumerated below:

1. Skill

The organization should focus on the lead teams and their ideas to work in such a manner so as to set a model of creativity among other teams and supporters. Moreover, the teams should always be confident to such an extent that in case the risk is gigantic, the organization is always there to back up. The organization should be trying to disseminate their ideas in a positive direction, encouraging their actions, offering solutions and providing them with the necessary infrastructure too.

2. Attitude

The priority of the organization should be on unity in diversity. The multiplicity of ideas should be welcome. The culture of the organization should be such that even the negative and critical feedback is provided with a positive framework. The giver of the idea should never be discouraged however small the idea is. The employees of the organization should always have a positive outlook towards the employer and the organization. The relationship of faith has to prevail. The quality of venturesome should be encouraged at every step.

3. Technique

The updation of techniques and strategies for the progress of the organization should be done frequently. The infrastructure also should be up-to-date. There should be more discussion regarding common goals. The issues acting as barriers to the progress of the organization should be sorted out as soon as possible through strong team work. Future plans should also be chalked out through effective techniques. A critical approach should be followed. From time to time, the training of the employees in an organization and interns or teachers should be carried out on prior basis.

4. Environment

The environment of the organization plays a crucial role in its progress. The employees and stakeholders should feel belongingness towards the organization. The adaptation and evolution of the stakeholders and organization should go hand in hand. The environment of the organization should be encouraging, inspirational and motivating.

5. Leadership

The leader has to be a role model for the employees of the organization. The leader must have the courage to take risks accompanied with that “go-for-it” attitude. Giving directions to the team and staying put on the steering wheel, come what may, has to be the attitude of the leader. A great leader may not be creative or innovative but he/ she should have the ability to encourage the same.

Creative organizations provide a clear path to create change in all corners of the organization—everyone from the finance team to the operations team needs to be encouraged to take on big problems and find innovative solutions. They provide the ways and means accompanied with the appropriate mindset to think leading to creative solutions of the existing problems.

1.7 Self-Check Questions

1. Organization is the form of every humanfor the attainment of a common purpose.
2. An organization works for agoal
3. The word “innovation” comes from the Latin wordmeaning new.
4. The inflated ego of an individual is ato creativity.
5. Creativity involves the ability to produceideas.
6. This term ‘Creative Swiping’ was first coined byin 1987.
7. NCF-2005 stands for
8. The teacher must be afor the students.
9. Being constructive is a characteristic of being.....
10. SWOT is an abbreviation for.....

1.8 Creative Swiping

Creative swiping is a novice / new term. There have been found to be many pre-requisites for an organization to bloom and creative swiping is indeed one of them. This term was first coined by Tom Peters in 1987. The leader of the organization may himself/ herself not be creative on his own but if he/ she values the ideas of the employees of the organization and uses them in such a manner as to enhance the organization qualitatively, then that is termed precisely as creative swiping. The leader of the organization should put the ideas forwarded and suggested by people into implementation so as to bring them into advantage for the organization itself.

Creative swiping is adoption of an idea and using it for the progress of the organization but on the other hand it is *not* a licence to plagiarise, defraud or produce counterfeit merchandise by pretending that something you stole from someone else is your work. In creative swiping, the amalgamation of own ideas and ideas of the other organization takes place.

‘Put NIH (Not Invented Here) behind you – and learn to copy (with unique adaptation/enhancement) from the best! Do so by aggressively seeking out the knowledge of competitors (small and overseas, not just tired old foes) and interesting non competitors. Become a ‘learning organization.’ Shuck your arrogance – ‘if it isn’t our idea, it can’t be that good’ – and become a determined copycat/adapter/enhancer.’

-Tom Peters(1987)

Attainment depends on doing something distinctive, and creative swiping, which amounts to adapting ideas from exceptional sources, aims exclusively at creating uniqueness. More than that, however, innovation depends on converting resourceful ideas into commercially viable ways of doing things. One should focus on how to benefit from the organization’s creativity. These days, the cut-throat competition is pressing every organization to develop survival skills to stay afloat in the market. It is possible only when the organization keeps the consistency of high profit growth.

The organizations have been going through a cut throat competition and there has always been a desperate hunger for innovative gimmicks. e.g. Schools in our country have been transforming into smart schools following the model schools of developed countries. Taking an example of advertisements will give the students a better idea about the creative swiping.

The perfect ratio of innovation and creative imitation can propel the organization into right direction of path of success. The risk-taking ability of an organization to allow freedom to its employees is a major factor for creative swiping. Creative swiping can be called a management practice that strives to try a time tested product / service. An organization, which is always on the lookout for its betterment, adds the experience of creative swiping by adding the ideas of others with its own.

1.9 Thriving Creativity

The word creativity is quite wide-ranging and includes many aspects. Michelle Korenfeld in her book 'Raising Creative Thinkers Guidebook' stresses on the 5E's. She considers mainly 5 core practices for expediting creative thoughts:

1. Explore
2. Experience
3. Examine
4. Elevate
5. Express

(i) Explore

An organization can foster creativity by encouraging its team members to explore avenues. They are let go to move at their own freedom of choice with an outlook of bigger aim i.e. progress of the organization. Sometimes even the previous knowledge gets challenged. New ideas are born resultantly.

(ii) Experience

Blending previous experiences with the new ones lead to more experiences. Hence connecting both of these kinds of experiences bear fruit in the long run. Diversity of experiences may lead to a better focus with convergent thinking and implementing them for the progress of the organization and finally to better results.

(iii) Examine

Evaluating oneself and one's output is a great idea in pushing the organization into progressive pathway. Feedback by the colleagues can be taken from time to time. Moreover one should not be hesitant to take criticism in a positive manner.

(iv) Elevate

Keeping the employees and team members in a positive state of mind can do wonders in their output. They can be involved into some fun filled activities and sent to excursions etc. The monotony of work should be broken to ignite creativity.

(v) Express

The expression and the happiness of creativity should be boasted about to the leader of the team in an open manner with the confidence that even a small creation will be praised with open arms.

In addition to the above mentioned factors, there can be positive reinforcement in the form of monetary gains as well as praiseworthy words. The barriers should be eliminated. Job security needs to be assured. Hence a creative team can propel the organization towards success and promotion.

1.10 Barriers to Creativity

Creativity has always been the root of a successful organization. It is hampered by many factors leading to downfall of an organization. A demotivated individual can prove to be the weakest link in the chain finally leading to the degradation of that organization. For example, when we were children studying in the school, the drawing teacher used to impart instructions regarding the drawing limited to a sheet of paper with specific measurements or specific object etc. For the creative kids, this factor hampers their creativity. In addition to these, there are other factors which kill creativity. These are enumerated below:

1. Negativity

It is one of the enemies of creativity. The person who has always been thinking negative about the consequences may never succeed in giving shape to his/ her creative ideas.

2. Self-doubt

The individual who has always been losing confidence in oneself and doubting own skills may never dare to be creative.

3. Over thinking

Thinking too much beyond whatever is required is one of the killers of creativity. Sensitivity in nature has to be within limits so that it encourages creativity and should not hamper it.

4. Ego

The inflated ego of an individual is a big roadblock on the road to success. If anyone in the team has his/her false ego clashing with the leader or colleague / peer, it may prove to be poisonous for the organization.

5. Fear

Fear may halt our initiative-taking capacities, reflexes, imagination, risk-taking behaviors, and production as we are more concerned with mitigating the cause of that fear and in seeking equilibrium and safety. We can even block ourselves with self-imposed fears of failure.

6. Stress

Stress has always proved to be bad for one's health. It drains our energy and finally the individual does not have any energy left to show creativity skills.

7. Chaos

The physical chaos at work environment or home causes imbalance in the working of the individual barring new ideas to get generated. Hence one should declutter oneself, both physically and mentally. Negative thoughts also should be removed out of mind leading to peace of mind.

8. Monotony

Repetitive routine and monotonous environment causes tiredness of the mind. Hence one should imbibe some fun activities in life, maybe ...be a child again. Sometimes we do not allow ourselves enough time to relax, to dream, to just sit and think.

9. Self-criticism

Too much criticism in one's own work / project may cause more harm than benefit both to the individual and organization.

10. Failure

Failures are the pillars of success, we all know the proverb. But sometimes the flooding of failures one after another may hamper the growth of creative ideas in one's mind finally leading to hampering of growth of the organization.

11. Lack of expertise

One may lose confidence of being creative if one lacks expertise. We should always remember that there is always first time for everything in life and the right time is now or never.

12. Lack of experience

New avenues get opened when you dare to crack ice for the first time. And take initiatives. Stay confident and gather new experiences. Success will follow.

13. The Expert Syndrome

A lot of people are in the habit of giving free advice to others. One should not avoid listening but do whatever one thinks is the best suitable act with the bigger goal of progress of the organization in view. Every path to success is different.

14. Ambiguity

If the organization does not have a well worded and clear vision and mission, the whole team may work off the road of success and all the efforts of creativity may go to waste.

15. Overconfidence

Confidence may boost creativity whereas it goes haywire if it is replaced by overconfidence.

16. Discouragement

One should not get affected by discouraging words from external sources be it organization, family, friends, team leader or colleagues. Rather taking it in a positive and constructive manner will bear better fruit. Divert your energy in the direction of positive output.

17. Lack of self-feedback

One should not evaluate oneself too soon and not avoid criticism about one's own creative ideas. Rather one should stay honest while opining about oneself.

Hence 'Nip the evil in the bud' should be the motto while dealing with barriers to creativity in an organization both at individual level and organizational level. The barriers to creativity should be removed as early as possible for they may hamper the success of an individual as well as the organization.

1.11 Let Us Sum Up

An innovation is a new thing or the method or a new method of doing something. Creativity is a phenomenon whereby something somehow new and somehow valuable is formed. There have been many characteristics associated with creativity. These include sensitivity, awareness, fluency, versatility and originality etc. Creative individuals make a progressive organization. Creative swiping is basically adopting an idea and using it for your own organization but on the other hand it is *not* a licence to plagiarise, defraud or produce counterfeit merchandise by pretending that something you stole from someone else is your work. The organization must focus on various aspects. Many factors act as facilitators whereas others may act as barriers to creativity. The facilitating factors should be enhanced but on the contrary, the ones which act as killers to creativity hampering growth , should be snubbed and obstructed immediately so that the organization can lead to progress further.

1.12 Suggested Activities

- Think about an incident where you had performed outstandingly without any pre-preparation.
- Relate one quality in you which makes you feel proud in society.

- Use your smartphone for searching by typing words in an inverted manner e.g. “elgoog” and not “google” straightaway.

1.13 Unit End Questions

1. What do you understand by the term ‘creativity’?
2. What are the various characteristics of a creative individual?
3. How can creativity be integrated in an organization?
4. What do you mean by Creative Swiping? Explain its importance in relevance to today’s world.
5. Make a list of characteristics commonly acting as barriers to creativity.

1.14 Key to Self-Check Questions

- 1) Association
- 2) Common
- 3) Novus
- 4) Barrier
- 5) Original
- 6) Tom Peters
- 7) National Curriculum Framework-2005
- 8) Role model
- 9) Creative
- 10) Strengths, Weaknesses, Opportunities, Threats

1.15 Suggested Readings and References

- Anderson,H.(Ed.). (1959). ‘*Creativity and its Cultivation*’,Address presented at the Interdisciplinary Symposia on Creativity , Michigan State University, East Lansing, Michigan. Harper & Row Publishers Inc., New York and Evanston. Library of Congress Catalog Card No.:59-7049.
- Guilford, J. P. (1986). *Creative talents: Their nature, uses and development*. Buffalo, NY: Bearly Ltd.

- Gulati,S.(Ed.). (1995). ‘Education for Creativity: A Resource Book for Teacher Educators’,NCERT.
- Runco, Mark A.; Albert, Robert S. (2010). "Creativity Research". In James C. Kaufman; Robert J. Sternberg (eds.). The Cambridge Handbook of Creativity. Cambridge University Press. ISBN 978-0-521-73025-9.
- Sternberg, R. J. (2006). The nature of creativity. Creativity Research Journal, 18 (1), 87-98.
- Taylor,C.W.(Ed.).(1964). ‘Creativity : Progress and Potential’.McGraw - Hill Book Company. Library of Congress Catalog Card No.:63-20450.
- <https://www.raisingcreativethinkers.com/> retrieved on 15th May 2021. (5 E’s for Creativity Education and Solving Problems in the Process- Received through mail)

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS (CISE-3)

UNIT 2: TAKING STRATEGIC APPROACH TO CREATIVITY AND INNOVATION

STRUCTURE:

- 2.1 Learning Objectives**
- 2.2 Introduction**
- 2.3 Strategic Approach: Meaning**
- 2.4 Radical VS Evolutionary Change**
- 2.5 Disruptive Innovation**
- 2.6 Open Innovation**
 - 2.6.1 Advantages of Open Innovation**
- 2.7 Self-Check Questions**
- 2.8 Understanding the Way to Bring Creativity and Innovation into an Organization**
- 2.9 Let Us Sum Up.**
- 2.10 Suggested Activities**
- 2.11 Unit End questions**
- 2.12 Key to Self-Check Questions**
- 2.13 Suggested Readings and References**

2.1 Learning Objectives

After the completion of the unit, the students will be able to:

- perceive the meaning of strategic approach.
- identify strategic approaches to creativity and innovation in an organization.
- explain the concept of change i.e. radical and evolutionary.
- differentiate between radical and evolutionary changes .
- understand the concept of disruptive and open innovation.
- consider the importance of disruptive and open innovation in an organization.
- understand the ways to foster creativity and innovation in an organization.

- exemplify the concepts mentioned in this unit i.e. strategic approach, radical and evolutionary change, disruptive and open innovation.
- devise appropriate strategic approaches at individual and organizational level.
- explain ideas related to bring creativity and innovation into an organization.

2.2 Introduction

Innovation and creativity are intertwined with each other inseparably. This unit focuses on various strategies involved in inculcating both these concepts into an organization for its progress. Creativity and innovation should be nurtured in organizations to enhance their quality. The students should be encouraged to express their ideas from childhood itself. Creativity is required to give place to innovation. Creativity is the heart of innovation. Sometimes these words are used interchangeably. The challenges faced by the organization can be more effectively tackled through strategic approaches. The terms radical vs evolutionary change, disruptive and open innovation have been explained and exemplified in this unit. Moreover, ways to bring creativity and innovation into an organization have also been dealt in detail. Learning involves filtering, thought-provoking and refining by being made to think tough. A typical example of innovation is open and distance learning system. The challenges faced by this system have augmented with the changing times though. The neck to neck competition is on the rise. Open learning system includes diverse readers ranging from local to global level. The quality cannot be compromised. Hence implementation of innovation and creativity has become the need of the hour. As the world has been transforming fast, so an organization to successfully survive and thrive, it should be innovative and creative and follow various strategies to rise during these times of competition. In this century, both skills i.e. creativity and innovation are the core skills required for progress and development both at individual and organizational levels.

2.3 Strategic Approach: Meaning

The word “strategic” stands for “the art of a troop leader”. It is considered in today’s world as the basic requisite of an organization. A strategic approach includes alliance and partnerships.

For the long term success, the strategic approach is the key. Strategic approach involves formulation of objectives and directs its activities towards them. It also comprises policy change, tools and expansion. Strategic approach is an approach including a set of practices that inspire visionary teams to look beyond the apparent.

Today's era is the era of competition. Strategic approach is a universal approach and it may function on many stages. It is indeed a methodical and organized approach which is mainly concentrated on dropping significant difference in the ideals through the breakthrough occasions using creativity and innovation.

For e.g., An institution or organization intends to hold a vaccination camp as per the guidelines by the Government. The strategic approach by the Head of the institution was followed by approaching an NGO (Non-Governmental Organization) and getting the event organized at a large scale by tapping the best human and non-human resources from the institution itself and NGO both.

A teacher can use many strategic approaches to teach in a classroom. Using technology in the classroom, showing visuals like charts and models , getting practical work done , taking students out for hands-on experiences, excursions etc. are few of the strategic approaches for effective teaching learning process in an educational organization. Strategic approach can lead to long term significant and successful results in the organization. The best practices can be tapped. The weaknesses can be vanished gradually by focusing on strengths of the organization.

2.4 Radical VS Evolutionary Change

As the name indicates, the word 'radical' stands for root or fundamental or basic and "Radical Change" hence indicates the type of change at the grass root level and is sometimes called fundamental change too. Small transformative steps may lead to big leaps in an organization.

Many miniscule and minute changes sometimes lead to bigger transformations. These changes lead to incessant improvement in an organization with continuous efforts. This type of change is revolutionary and is uncommon. Radical change makes use of technology and new ways to make an organization continuously progress further. This change occurs relatively fast.

Evolutionary change on the other hand shows the cumulative effect and is quite visible as a breakthrough in an organization. Significant changes in moderate manner are brought about in radical change. The transformation of such kind is more confined, more turgid, more unassertive, and less noticeable than traditional forms—yet no less noteworthy and important.

For e.g. In earlier times, the phone used to be huge with a set with manual dialer. The radical changes might have been subtle changes which would have been taking place with the onset of new designs and sophisticated models of phones. The changes by the companies were being done as per the requirements of the consumers. If we look around, now the cell phones and smart phones have constricted to very small and sophisticated models even of the size of a smart watch. The radical changes might have been occurring all the time meeting small targets on day to day basis but the evolutionary change has been visible only when the sophisticated new model of smartphone came into being.

Radical change is costly and consumes more time too. In addition to that, radical change involves the stakeholders to always keep an eye on people in the organization, has a vision and the main purpose is to take that vision to the heart of the customers. This change involves a combination of continuous incremental changes and innovations. Small steps of planned radical changes lead to an evolutionary quantum change in the form of a transformational shift in the organization.

For e.g. The boiling of milk involves lot of heating reaching out to all the corners of the tumbler, This process can easily be compared to radical change. And finally when it boils and swells up coming out of the tumbler, that can be compared to an evolutionary change.

Radical change involves small specific stages of change happening continuously in an organization until it leads to an evolutionary change moving on to the next cycle of processes leading to better products.

2.5 Disruptive Innovation

As the name indicates “Disruptive Innovation” is a sudden intermission or discontinuity. This term was coined by Clayton M. Christensen of Harvard Business School in 1995. Disruptive innovation involves the sudden breaking down of all the processes that had already been

working behind an organization. It is directed towards the improvement in the existing practices in that organization. This type of innovation is required to stay at par with the changing digital age. Sometimes disruptive innovation is accompanied with the exploitation of new technologies into new behaviors.

This can best be explained by an example. The attendance system in an educational organization may have been going on manually for many years but after disruptive innovation, that practice has suddenly been stopped. With disruptive innovation, now the manual attendance system has been replaced by biometric system of attendance.

The use of digital technology and Information and Communication Technology (ICT) work as core components in disruptive innovation. The stakeholders, employees and concerned human resources of the organization must be reinforced with all the digital skills required leading to progress of the organization.

Internet and Artificial Intelligence are very common examples of disruptive innovation.

In the book “Disruptive Class: How Disruptive Innovation will Change the World Learns”, Curtis Johnson has stated that today’s education system lacks inculcation of necessary skills to interact with digital society among students. More stress on customized training of the students and employees in an organization should be focussed upon. Online teaching-learning , MOOCs (Massive Online Open Courses), online webinars, online apps etc. are some of the examples of application of disruptive innovation which have given a cutting edge and new shape to the whole process of teaching and learning.

2.6 Open Innovation

The term Open innovation was first proposed by Professor Henry Chesbrough in early 2000s. Chesbrough stated that “open innovation is a more distributed, more participatory, and more decentralized approach to innovation.” This approach is a great way to access external knowledge and to find new ways of doing things. Open innovation is focussed towards a broader goal of not restricting an organization towards the sole aim of its own progress but working towards increasing the economy as a whole.

Open innovation is not restricted to organization's self-contained environment only but has its ramifications spreading in various directions around. It lies beyond the organization's scope. Open innovation works in a chain manner integrating ideas, technologies and other processes of intra-organizational environment. It can be called to work as collaborative networking.

Many organizations have been proposing various educational programs which have been prepared through collaboration of many organizations integrating and working together. The distance education course titled "Building and Sustaining Innovative Organisations" by Jagat Guru Nanak Dev Punjab State Open University is also an example of open innovation.

'Startup', the term used very commonly these days is also an example appropriately quoted here as open innovation. In a startup, many individuals come together, make the best use of their innovation and start earning.

Open innovation bridges the resources – both internal and external and creates the best of opportunities for progress of the organization. It works in a network system with collaboration with other people or organizations, expertise is shared, resources are tapped to the best of their utility and obstacles are overcome through pool of strategic planning.

For e.g. An exchange programme of expert faculty between different countries or even between different schools and colleges or universities for teaching and sharing experiences is an example of open innovation.

2.6.1 Advantages of Open Innovation

Open Innovation is beneficial in today's world in many ways, some of which have been listed below:

- The pool of ideas can be broadened.
- Innovation cost can be lowered .
- The products can be developed at a faster pace.
- It attracts the interest of the people especially stakeholders and investors.
- Innovation challenges prove to be fruitful.

The finest ideas that the world has to offer can be gathered through open innovation so that the toughest problems can be solved. The ideas are exchanged beyond the organization's boundaries in an open environment. The use of resources is judiciously carried out . Even the

stakeholders including clients and customers of the organization are encouraged to work actively suggesting innovative ideas to the organization itself. The employees of the organization may end up moving and jumping, imparting their innovative ideas to many organizations simultaneously in an active manner though high monetary aspects are attached with it.

The open innovation welcomes innovation from internal as well as external sources. In this type of innovation, the unused potential can easily be tapped and utilized. Though the limitation of open innovation can be that it ends up leading to negative impact on the organization itself due to harmful factors penetrating inside it. The organizations come together in clusters to work weaving a network together. The benefits are produced through cooperation.

2.7 Self-Check Questions

- Q.1 The wordstands for “the art of a troop leader”.
- Q.2 A strategic approach involves alliances and
- Q.3 Radical change is also called.....
- Q.4 The change occurring at the grass root level ischange.
- Q.5 Evolutionary change showseffect.
- Q.6 The term disruptive Innovation was given by
- Q.7 innovation involves a sudden intermission or discontinuity.
- Q.8 Professor Henry Chesbrough gave the terminnovation.
- Q.9 ICT is the core component ofinnovation.
- Q.10 The ideas are exchanged beyond the organization’s boundaries in an open environment intype of innovation.

2.8 Understanding the Way to Bring Creativity and Innovation into an Organization

Psychologists seem to agree that creativity involves the ability to produce original ideas and to precede new relationships among unrelated things. Creativity is multifaceted. The work culture

of an organization, self-motivation, positive environment monetary gains, and encouragement are few of the factors which may encourage creativity and innovation into that organization. The 21st century skills include both creativity and innovation. Human potential can be promoted in extraordinary ways with these both. These elicit positive aspects of the individual. Various factors can provide conducive environment in the organization to promote creativity and innovation. Some of them have been enumerated below:

- 1. Creative skills should be encouraged among the employees:** If a teacher wants to try a new strategy of teaching which temporarily may lead to indiscipline in the classroom, the head of the institute should not demotivate the teacher for that initiative.
- 2. Emotional connections and belongingness with the institutions bring better results:** These factors always propel the employees towards betterment of the organization. For e.g., a teacher who had earlier been a student of the same college where he/she is employed, has emotional attachment with the college and he / she will always strive to do something extraordinary to improve the teaching learning and other aspects of the college.
- 3. Congenial environment encourages creativity:** It is also one of the key factors which plays a role in an understanding the manner to lead to the progress of the organization.
- 4. Encourage freedom of expression:** The creative ideas of the employees in the organization should not be snubbed but on the other hand, they should be provided an environment to share their new ideas without any hesitation and apprehension.
- 5. Training opportunities and new avenues for growth in their fields should be provided by the organization itself:** There is always scope for improvement and to gain expertise in the specific field. New opportunities and training avenues for professional growth should be provided by the organization at its own expense.
- 6. Judgement should be deferred:** One individual at one time may have been doing great but the same person at some other time may not have been that productive. So the person should not be tagged to be unproductive, not innovative and non-creative just because of any one chance. A wide variety of perceptions can be encouraged increasing the flow of creative ideas.
- 7. The internal blocks to creativity should be removed:** Many a times the creative person faces certain obstacles related to some internal factors within the organization

and may not be able to show the hundred percent creative side of him. In such a case, the organization should come forward to remove such internal barriers. Conducive environment of the organization leads to better creativity expression. Any kind of mental brakes should be removed. Freewheeling should be encouraged. The creative person should be confident that his ideas will not be ridiculed. Have to feel sure that the ideas will not be ridiculed so that he can express and share his creative work and thoughts with the organization without any hesitation.

8. **Give time for practice:** A creative individual should be at peace with himself to give full expression to his ideas. Hurry may lead him to worry causing degradation of his task. Hence, enough time should be imparted to him to carry out his practice.
9. **Reinforce the creative individual in a positive manner:** Special privileges, holidays for incubation time to the thoughts and ideas, rewards, bonuses, prizes, increments etc. by the organization will motivate the creative person finally reaching out for the benefit for the organization itself.
10. **Encourage heterogeneity and diversity in the team:** A broad range of functioning styles, thought processes, and perspectives is essential to succeed where a homogenized team loses the creative ability to watch out for resolutions observable to strangers. Only a well-fertilized field can give rise to innovation and creativity. Interaction in the team should be encouraged leading to better and improved exchange of ideas. Information silos can be broken down so that no barrier exists for better exchange of ideas.

Freedom to create and innovate encourages autonomy among creative employees and provides incessant motivation. The sharing of ideas leads to opening of minds and finally encourages creativity and innovation. Young children should be encouraged to try out new circumstances and opportunities.

2.9 Let Us Sum Up

An organization faces many challenges to thrive but strategic approaches assist in tackling the problems effectively. Strategic approach works better with creativity and innovation. Individual creativity if given conducive environment leads to better innovation and creative

ideas in a team manner. Radical change makes use of expertise and novel ways to make an organization uninterruptedly evolve further. This change occurs speedily. Evolutionary change on the other hand shows the aggregate effect and is quite noticeable as a breakthrough in an organization.

Open innovation works in a chain manner integrating ideas, technologies and other processes of intra-organizational environment. The use of digital technology and Information and Communication Technology work as core components in disruptive innovation. The work culture of an organization, self-motivation, positive environment monetary gains, and encouragement are few of the factors which may encourage creativity and innovation into that organization.

2.10 Suggested Activities

- Create a blog. Name it something weird. Encourage your friends from all parts of the world to make it more creative with new ideas, artwork, poems, digital pictures and images etc. Get it updated regularly.
- Make a list of out-of-the-box ideas and initiatives from our daily life which lead to sustainability and save environment.

2.11 Unit End Questions

- Q.1 What is the nature of Strategic Approach? Is it narrow or broad? Explain through an example.
- Q.2 Differentiate between Radical and Evolutionary change. Can both be blended ? How?
- Q.3 What do you understand by Open Innovation?
- Q.4 Enumerate advantages of open innovation.
- Q.5 Explain Disruptive Innovation through an example.
- Q.6 Enlist 5 ways in which an organization can foster creativity and innovation in an organization in a subtle and understanding manner.

2.12 Key to Self-Check Questions

- A.1 strategic
- A.2 partnerships
- A.3 fundamental change
- A.4 radical
- A.5 cumulative
- A.6 Christensen
- A.7 disruptive
- A.8 open
- A.9 disruptive
- A.10 open

2.13 Suggested Readings and References

- Case of disruptive innovation(2016), The Star Online, 16 May 2016.<http://www.thestar.com.my/opinion/letters/2016/05/16/case-of-disruptive-innovation/>
- Chesbrough,H.(2003) ‘The Era of Open Innovation’, *Sloan Management Review*,44(3)(Spring).
- Chesbrough H., Vanhaverbeke W. and West J., eds. (2006),Open Innovation: Researching a New Paradigm. Oxford: Oxford University Press,.ISBN:0-19-929072-5.5.<http://www.businessdictionary.com/definition/openinnovation.html#ixzz3X4PgaJd>.
- Clayton M. Christensen, Michael E. Raynor and Rory McDonald (2015), What is Disruptive Innovation? Harvard Business Review.
- Dikshit, J. Need for a National Creativity and Innovation Drive. News Letter_Jan-Mar 2018_for web.pmd

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS (CISE-3)

UNIT 3: INNOVATIVE LEADERSHIP

STRUCTURE:

3.0 Learning Outcomes

3.1 Introduction

3.2 Defining Leadership, Meaning and Its Importance

3.2.1 Why leadership matters?

3.3 Context of Innovation in Leadership.

3.3.1 Need of innovative leadership

3.4 Component and attributes of Innovative Leadership

3.4.2 Components of Innovative Leadership

3.4.3 Attributes of Innovative Leadership

3.4.4 What can a leader do within his/her organization to foster innovative environment at workplace?

3.4.5 Some practical strategies to foster team innovation

3.5 Innovative thinking skills

3.5.1 Business thinking vs Innovative thinking

3.5.2 Building blocks for innovative thinking

3.6 Experimenting with innovation

3.6.1 Elements of experimenting

3.7 Summing Up

3.8 Questions for Reflection and Practice

3.9 References and Suggested Readings

3.0 Learning Outcomes

After studying the unit, you will be able to

- Define leadership and discuss its importance;
- Give need of innovation in leadership;
- Explain the components and attributes of innovative leadership;
- Discuss the need and development of innovative thinking skills; and
- Elaborate the concept of experimenting with innovation.

3.1 Introduction

Whenever we talk of innovative leadership at organizations, it implies the way the organizations are structured and organized. It implies the way they manage material and non material resources and take decisions in their organizations. It also defines their relationship with their stakeholders. The prevailing job stress leaves little time with the employees to think differently and innovate. But the tight competition gives an edge to the organizations who strive for innovation and creativity.

3.2 Defining Leadership: Meaning and Its Importance

Every organization has its own defined goals and vision. Leadership is the ability to motivate and inspire the group to work towards the achievement of this set vision and goals. It is essentially a continuous process of influencing behavior in context of mutual relations that exist between the leader and his followers. Different scholars have defined leadership in different ways

Bernard (1938) defines leadership as the quality of behavior of the individuals whereby they guide people or their activities in organized efforts.

Terry defines, “Leadership is a relationship in which one person influences others to work together willingly on related tasks to attain what the leader desires.”

Williams (2005), states that, “leadership is an interactive art in which the leader is dancing with the context, the problem, the faction, and the objective”.

Leadership is a kind of power where one person has the ability to influence or change the values, beliefs, behavior and attitudes of another person (Ganta, and Manukonda, 2014).

Whether formal or informal leadership, it is very important for the organization as leaders is the person who brings about the change for betterment. It is the leader who develops the vision for the organization, ensures that same is communicated to the people in the organization, thereby inspire and motivate people to translate the goals into reality.

3.2.1 Why Leadership matters?

Though an inspiring leader has a vision, act with integrity and are authentic, at the same time, they need to deliver. Results are outcome of leader’s actions. All listed attribute have to be related to a so what question. e.g. leader needs vision so that the organization is able to

increase their stakeholders confidence. Leader needs to identify its target audience, why they have interest in the organization and how can the organization develop connections with them. Only when the leader finds answer to these questions, that they are able to focus on right resources for right audience.

Leaders increase the tangible and intangible value of the organization. Leaders define and create the right organization capabilities for future success. They diagnose and create capabilities of shared mindset, talent, collaboration, speed, accountability, learning, and leadership throughout the organization.

Leaders invest in core competencies to increase the probability of strategic success. They invest in concrete support for investing in technical areas consistent with your strategy that underscore how you build value in R&D, technology, sales and marketing, logistics, and manufacturing.

Leaders who envision growth build enthusiasm. They encourage belief in and support for customer intimacy, product innovation, or geographic expansion. They create an aspired, shared, and enacted strategy.

Leaders who make and keep promises build credibility, confidence, and conviction. They build and defend a reputation among external and internal stakeholders for delivering your earnings promises.

Leaders create organizations that turn strategic aspirations into sustained actions. What people admire about big organizations is not how they are structured or the processes through which work is accomplished; they care about their capabilities — their ability to innovate or be responsive to changing customer needs.

An efficient leaderships is able to

- assess talent through means such as productivity measures, retention of top talent.
- create a return on time invested (ROTI) index to monitor how much time it took to do something and the value created by the activity.
- measure shared mindset (or cultural unity) by tracking the degree of alignment between internal and external mindsets.
- track accountability by looking at a performance appraisal form.
- estimate an organization's break up value by determining what each division of it might be worth to a potential buyer, totaling these numbers, and comparing that number with your current market value.

- monitor the pool of future leaders.
- monitor this capability by identifying key accounts and then tracking the share of those key accounts over time.
- monitor the extent to which employees throughout the organization have a common understanding of the company's strategy.

Check Your Progress 1

1: Define leadership. What are the attributes of a good leader?

2: How does the success of the organization depends on its leader.

3.3 Context of Innovation in Leadership

How could Amazon become the third most valuable company in the world? How could Pete Cashmore take his company Mashable as one of the most popular digital media website? What make Mark Zuckerberg different from other CEOs? How was Mary Barra, CEO of general Motors help transform her company? What qualities of this leader helped them take their organization to new height? Of many other attributes, ability to think differently, ability to innovate was one that enabled them to achieve their objectives. The environments in which organizations are working these days are constantly changing. This poses a constant challenge where the organization can either choose to adapt and innovate or cease to exist and be left behind in today's technological, changing world.

So, how does one define innovative leadership? From organizational perspective innovation is providing ambidextrousness and in terms of leadership it is the way the ideas travel in hierarchy and the ability of the leader to transform them to reality. Kanter states "innovation springs from a culture that encourages everyone to come forth with new ideas, however small, and then provides the time and seed money to develop it." Whenever one talk of 'innovative leaders', it is meant that they are 'creative thinkers'. Innovators are the people who are able to generate creative ideas. They are creative visionaries who have big ideas and can motivate people around them to turn the ideas into reality. The innovative leader creates and organic structure in the organization, helping the employees to expand their capabilities and explore and develop new ideas and applications. An innovative leader may not be a very powerful CEO but has the ability to recognize something great and envisions the pathway to reality.

Innovative leadership is needed as this enables them to learn to operate in challenging and unpredictable circumstances. Leaders always need to look for new ways so as to give them competitive edge and bring in new organizations, services and products. It is the task of the leaders to provide the organizational culture that nurtures and acknowledges change at each level.

3.3.1 Need of innovative leadership

The world around us in which we live and work is constantly changing and the only way to keep pace with it is to innovate. But remember, innovation is not inventing something new always but working to add value to the organization. It is the vision to foster the unique skills into the team for creating an environment fostering creative freedom and innovation.

- i. Innovative leadership help organization to build a creative team that can bring up inventions to increase revenues and reflect on organizational outcomes positively.
- ii. An innovative leadership motivates and inspire all members to collaboratively work together to accomplish the vision of the organization (Isaksen& Akkermans, 2011).
- iii. It enables the creation of a productive work environment that reduces work pressure on the employees and maximizes their productivity.
- iv. New ideas and concepts are needed to stay alive in this competitive world. A static, conservative organization, lacking innovative leadership, faces the real danger of their stakeholders shifting their associations.
- v. An innovative leadership builds up a passion in their team to work towards a central vision. They will drive the organization towards its vision without micromanaging.
- vi. Innovative leaders constantly monitor the needs of the society and stakeholders. It helps to find solutions to the problems of the complex world.

3.4 Component and Attributes of Innovative Leadership

Rogers (2003) described the innovation-diffusion process as “an uncertainty reduction process” and he proposes attributes of innovations that help to decrease uncertainty about the innovation. Attributes of innovations includes five characteristics of innovations: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability. Rogers

(2003) stated that “individuals’ perceptions of these characteristics predict the rate of adoption of innovations”

- **Relative advantage:** Roger (2003) defined relative advantage as the degree to which an innovation is perceived as being better than the idea it supersedes. Its elements include the cost and social status motivation. According to Roger innovation can be categorized as preventive and incremental. When a new idea is adopted in order to lower the probability of some unwanted future event, it is preventive in nature. Preventive innovations usually have a slow rate of adoption so the relative advantage is uncertain. However, incremental innovations provide beneficial outcomes in a short period. The COVID 19 crisis forced the entire educational process to go online. Teachers had to adopt technology to continue their teaching learning activity. If the teacher sees that the technology adoption is valued in their instruction, they will continue to use it. Technology needs to provide helpful experiences to the teacher and students for its integration.

Hence to increase the rate of adoption, its relative advantage has to be made more effective. This can be done by giving incentives which may be used to support individual adopting an innovation.

- **Compatibility :** Rogers (2003) stated that “compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” Each innovation influences teachers’ opinions, beliefs, values, and views about teaching (Hoerup (2001). When an innovation is compatible with an individual’s needs, the rate of adoption of the innovation will increase because of decreased uncertainty. Thus, even naming the innovation is an important part of compatibility as it makes innovation more meaningful to the potential adopter.
- **Complexity:** Rogers (2003) defined complexity as “the degree to which an innovation is perceived as relatively difficult to understand and use” Excessive complexity of innovation emerges as an obstacle in the path of its adoption. Adoption of such a innovation may need a change of approach. One may not prefer taking the risk of bringing a major overhaul in ones methodology. A technological innovation might confront faculty members with the challenge of changing their teaching methodology to integrate the technological innovation into their instruction (Parisot, 1995), so it might have different levels of complexity.
- **Trialability:** According to Rogers (2003), “Trialability is the degree to which an innovation may be experimented with on a limited basis.” It is positively correlated

with the rate of adoption of innovation. Innovation may be changed or modified by its potential adopter. Reinvention may create faster adoption of the innovation. Rogers stated that earlier adopters see the trialability attribute of innovations as more important than later adopters.

- **Observability:** The last characteristic of innovations is observability. Rogers (2003) defined observability as “the degree to which the results of an innovation are visible to others” Modelling is the key motivational factor in adoption of innovation.

Rogers (2003) argued that innovations offering more relative advantage, compatibility, simplicity, trialability, and observability will be adopted faster than other innovations. Rogers does caution, “getting a new idea adopted, even when it has obvious advantages, is difficult” so the availability of all of these variables of innovations speed up the innovation-diffusion process.

3.4.2 Components of Innovative Leadership

Innovative leadership is a process of making radical changes through innovation or innovations to solve political, economical, social, technological and environmental problems to satisfy people’s needs. A leader who provides radical changes is called an innovative leader. As a leader, they know the past, live in present and can predict the future. Through this ability they are able to establish a vision for changing and creating new conditions for problem solving and need satisfaction. They develop a shared vision and believe that it creates focus, identify direction, inspire and unite people in common effort, and align core values of people for successful implementation.

Innovation leadership has two components – an innovative approach to leadership and leadership for innovation.

- **Innovative Leadership:** Applying Innovative Thinking to Leadership Tasks Leadership for innovation. This implies bringing in new thinking and new actions to the approach of leading and managing the work. When the organization faces new challenges, this implies the extent to which the leader is able to define his/her role differently. What steps does he/she undertakes to break the shackles of the problems.
- **Leadership for Innovation:** As a leader, one needs to learn the ways of creating an organizational climate where other teams’ members are able to apply innovative thinking to solve problems and develop new products and services. It leads to development of culture of innovation where everyone is contributing instead of a few. As a leader how can you help your team members to think differently and work in a new ways to face the

challenges? What needs to be done for innovation in context of resources constraints?
How can you stay ahead of others in the time of competition.

Check Your Progress 2

1. Define innovative leadership.
2. What are the components of innovative leadership?
3. Why do we need innovations in leadership?

3.4.3 Attributes of Innovative Leadership

Let us try to seek answers to a few question: Why is it that a few organizations are rising even in times of uncertainty? What is the solution to prevailing social injustice, inequalities and unrest? What changes are needed to meet the twenty century problems we are facing? Research evidence proofs that innovative leadership might be a viable alternative to contemporary leadership for solving these current problems effectively. Now the question arises what are the attributes of an innovative leader? If one analyze the successful innovative leaders like Steve Jobs, Jorma Ollila and others it is found that innovative leadership practices depends on the depth and breadth of leadership knowledge, variety of creative skills, strong shared values, and extraordinary talents of the innovative leaders. Through these qualities they are able to understand the causes of current and future problems and then eventually solve them also. Innovative leaders are visionaries, can anticipate the future, take risk and show commitment towards problem solving and need satisfaction.

3.4.4 What can a leader do within his/her organization to foster innovative environment at workplace?

It has to remembered that a leader needs to be innovative to create a new vision. New approach and learn to adapt the already in use methodology to the new needs and bring about the desired change in the organization.

- i. **Collaboration:** An innovative leader ensures that the team members work close together and have faith on each other to discover new techniques/ways to create great outcomes for the organization
- ii. **Communication:** A strong communication network is ensures as only communication can help build trust and collaboration. The communication style sets the tone and foster creative and innovative thinking.
- iii. **Courageous:** The leader challenges each of his team member to develop critical thinking and starve for continuous improvement. He/She takes the charge of a change agent to

support constructive disruption to improve performance. This means embracing risk as the new normal and sees opportunity in everything.

- iv. **Course correction:** It helps the team to adapt themselves to changing environment. The leader looks for answer to questions on what he /she must keep doing? What he/she needs to stop doing? And what he/she needs to start doing?
- v. **Knowledge:** An understanding and awareness of peoples problem is essential for development of new ways and means to solve them successfully for satisfying people's needs. It includes knowledge of technologies, processes, rules, principles and methods. It helps the leaders to determine what to do, how to do it, and the why aspects of the leadership practices. Explicit knowledge includes basic technical knowledge which is assisted by tactical knowledge (knowledge including social values, ideas, intuitions, imaginations, and beliefs) to accomplish vision, goals and mission of an organization.
- vi. **Skills and values:** Innovation leaders inspire and motivate through action They possess. Leadership skills that enable them to shorten the task time, improve quality of work by avoiding repetition. They are able to establish learning organization and create tacit knowledge to think creatively and learn new values and talents. Values influence the leaders' relations with the followers, and help them to establish open communication and a close relationship environment. Innovative leaders should have and utilize values toward developing, communicating, and motivating followers to develop successful innovations.
- vii. **Risk tolerance:** It is a measure of the level of risk an organization is willing to accept. An innovative leader has a good sense both of what risks an organization can handle without too much trouble and how to keep those risks in check if a plan boomerangs. This can take many forms beyond just believing in a bold idea, like evaluating whether open innovation or crowd sourcing is the best technique for your particular risk scenario.
- viii. **Inspirational:** Through a clear purpose, objective and vision for his work, an innovative leader inspires and motivates his team member. His actions provide the required guidance and direction to the team.
- ix. **Persuasive:** Innovative leaders are highly effective in getting others to accept good ideas. They do not push or force their ideas onto their teams. Instead, they present ideas with enthusiasm and conviction and the team willingly follows.
- x. **Display excellent strategic vision:** Effective innovative leaders are able to create a vision and enable their teams to assist with the plans to build it into reality.

- xii. **Customer focus:** These leaders were able to get inside the customer's mind. They networked with clients and asked incessant questions about their needs and wants.
- xiii. **Reciprocal trust:** Innovation often requires some level of risk. Not all innovative ideas are successful. These highly innovative leaders initiated warm, collaborative relationships with the innovators who worked for them. These leaders were highly accessible and colleagues knew that their leader would cover their backs and not throw them under the bus if something went wrong. People were never punished for honest mistakes.
- xiv. **Fearless customer loyalty:** These leaders focused on the customer and not pleasing the boss or some other higher level executive.
- xv. **Faith in a communicative culture:** These leaders believed that the best and most innovative ideas came from the bottom-up. These leaders worked to develop a culture that allowed for and listened to good ideas from the first level of the organization all the way to the top. These leaders were energetic, optimistic and receptive to new ideas. They listened. (Zenger & Folkman 2014)

Center for Creative Leadership (2002) states that innovation always is a team effort. Instead of focusing on individuals for productivity, optimizing teams is needed to give a new life to the projects. Teams are always more innovative than any individual team member and are better placed to push creative ideas through the implementation process so that they may become innovations. How can one ensure that the team is an effective innovative team? It can be achieved by adopting the following approach:

- i. **Be result and not method oriented:** As a leader set the goals for the team and give each member freedom to design their own paths to achieve them. The members should be encouraged to consult and explore external resources.
- ii. **Give them team resources:** The environment and the resources, team is working with, should inspire and motivate the team members. Innovative approaches /simulations should be used to keep the interest alive. Brainstorming sessions can also be organized.
- iii. **Promote equality:** Hierarchies in an organization always promote an approval seeking approach. The team members always look for approval from seniors and waste most of their time in pleasing the bosses. Either all team members should be kept at the same hierarchical level or team rules should be clearly stated to discourage the hierarchical approach.

- iv. **Understand basics of group innovation** – Leaders need to have basic understanding of group creativity. This should include an understanding of creative problem solving methodology, motivating team members to be creative, keeping criticism in check (until the appropriate time), idea generation methods, and evaluation methods.
- v. **Establish competitive environment** - Put teams together in highly competitive situations to motivate team members to push themselves harder. Instead of putting the team members into excessive competitive environment, a good humor competition or even rivalry between teams adds a competitive edge with minimal stress.
- vi. **Establish processes for inter-team communication** - Teams can learn from each other. Someone outside the team may see something in a problem that team members fail to see, simply because they are too close to the issue at hand. Hence, it is important to bring teams together and encourage inter-team communication. Nevertheless, it is also critical to ensure that teams do not get bogged down in inter-team meetings or report writing that detracts from creative problem solving. It may be a good idea to have periodic brainstorming meetings where teams summarize their work and other teams can provide suggestions.
- vii. **Teams are not forever** - Over time, team members learn to understand each other. They “share common language and a common set of unspoken understandings”, which psychologists call “tacit knowledge.” This tacit knowledge facilitates easy communication flow and makes it easy to be creative. Likewise, the team develops an identity and hence pride in their performance. After about two years or so, however, team members get to know each other too well. And with over familiarization comes predictability and possibly even boredom. Thus, it is good to give teams time to jell, but bad to keep them together for too long. Ideally, you should mix and match team members every 18 to 24 months.
- viii. **Reward the team, not the individual** - If you offer the entire team a reward for its creative ideas, they are motivated to work together as a team. When you reward individuals within the team for their creative ideas, they are motivated to act selfishly in order to win rewards. At best, that would probably include hiding information from fellow team members. At worst it might include stealing ideas and deception. Almost certainly, it will result in bad feelings when people see team-mates rewarded while they are not.
- ix. **Diversity** – When you want a creative team to work on new marketing ideas, don’t limit its population to marketing people. Bring in people from different divisions. A

greater diversity of team members provides a wider range of experience, skills and thinking patterns and those results in a higher level of creativity.

3.4.5 Some practical strategies to foster team innovation

- i. **Promote regular team brainstorming sessions**, which allow employees a chance to produce a high quantity of ideas. Then analyse and choose those ideas that are of high quality.
- ii. **Create an encouraging work environment**: If employees see that their ideas are encouraged and accepted, they will be more likely to be creative, leading to potential innovation in the workplace.
- iii. **Create a collaborative work environment**: Creativity and innovation can stem from employees working together to reach a goal. Foster communication between employees and between departments and reward those that work together to solve problems.
- iv. **Encourage your team members to take risks**: Employees won't be creative or innovative if they fear a backlash from failure. Create an environment that is free from fear of failure; treat your employees' failures as a learning tool, rather than a means for passing around blame.
- v. **Create a safe haven for new thinking**: Encourage a broad range of ideas, including those not immediately seen as feasible, or even "sensible," for they are where the seeds of innovation can be found. Some organizations have "creative-thinking spaces," filled with items such as paintings, photographs, non-work related magazines, building materials and other stimuli, where employees can engage in idea generation in an environment separate from their everyday routine.
- vi. **Humour corner**: Give employees an area to post cartoons, illustrations, and other items designed to relieve stress. The staff can award a prize for the best submission.
- vii. **Surprise Celebrations**: Often it's the unexpected and informal that employees enjoy as much as formal awards. Conduct frequent, unannounced recognition and award celebrations, such as having a pizza party.
- viii. **Breakfast with the President**: Initiate a "Breakfast with the President" program to improve communications between employees and the top management. Arrange a monthly breakfast with coffee and biscuits served by the staff and open discussions. Results - higher morale and a sense of open communication.

- ix. **Being outsiders in your team:** Idea generation works best when there are differences in perspective, knowledge and background - creativity is a product of organizational diversity. Ideally, a team attempting to come up with a fresh, new solution to a tough challenge should consist of both experts in the area being discussed, as well as so-called “naïve” idea-contributors that may see the problem in ways the experts cannot. Also, because they’re not experts, they don’t know what doesn’t work!
- x. **Support employees for engaging in the ideation process:** It is important to recognize the efforts of those who contribute to the process of generating and developing ideas, even if no applicable concept or solution is produced. Properly encouraged, these individuals are more likely to engage in the creative process again, perhaps coming up with the next big breakthrough!

Check Your Progress 3

1. What are the attributes of an innovative leadership. Discuss these by taking examples from real life.
2. What strategies need to be adopted by leaders to bring about innovation in an organization?

3.5 Innovative Thinking

Often leaders feel frustrated about the lack of innovation at their workplace. The hierarchical approvals needed to implement innovative ideas takes so much time that by the time they are approved, there is nothing new left in them. It is felt that there is a need of creating a culture of innovation that would allow ideas to grow, flourish and add values to the organization. However the complexities of the present times have made planning a challenge. And ensuring commitment to the plan for five years is also very difficult.

There were times when strategic planning was required for flourishing the organization. The future of the organizations depended on the implementation of the established framework. In these times of uncertainty, innovation is the new answer. Without innovative approach, most organizations would eventually die and lose their existence. Research by Soo et al. (2002) concluded, “The greater the amount of innovation, the greater the market and financial performance.” Actively pursuing innovation requires resources and focus. It needs innovative leadership, organizational support and organizational values and culture favoring innovation.

3.5.1 Business Thinking vs Innovative Thinking

Development of innovative leadership is a two step process. The leader , at the first step, need to individually get in touch with his/her own innovative thinking skills so as to deal with complexities. Secondly organizations need to develop an innovative leadership culture in form of a climate that promotes and acknowledge innovative process. Such a culture will recognize and manage the tensions between interrelated opposites.

How is innovative thinking different from Business thinking?

Business thinking is based on research based logical facts. The decisions taken here are derived from evidence based deductive and inductive reasoning. As a business thinker, a leader is quick to make decisions and always look for the right answer among the wrong answer. It is all about driving results and removing ambiguity. However in situations of instability or complexities driving results becomes difficult. In such cases when one is unable to find the right answer, one needs to approach the situation in unconventional way – innovative thinking.

Innovative thinking does not base itself on previous experiences or known facts. Here the desired future state is imagined and then the path to reach there is figured out. Emphasis is laid on exploring multiple possibilities of reaching the goals rather than looking for right or wrong answers. Ambiguity is taken as an advantage not the problem. As a leader one is able to bring in new ideas and energy for solving the challenges the organization faces. This brings in more innovation to the organization.

The need is not to discard business thinking but acknowledge that both business and innovative thinking exist and that there is a need of finding a delicate balance between the two for success. A leader needs to have the ability to switch between these two modes of thinking so as to implement innovations. Leaders can contribute by taking an active role in creating a system that enables coordination of innovative works effectively. Through role modeling the leader can provide direction and create commitment by engaging intrinsic motivation, energy and passion. This can only ensure a start up, for a continuous adoption of the same top up organizational support is needed.

3.5.2 Building blocks for innovative thinking

Effective innovative thinking has three essential building blocks:

i. **Tool set:** collection of tools and techniques used to generate new options, implement them in the organization, communicate direction, create alignment, and cause commitment.

- **Brainstorming:** structured brainstorming where a facilitator leads the thinking process and ensure accountability of the group to a specific set of guidelines. The facilitator alternates between between individual reflection and group dialogue to ensure a proper balance of building, reflecting, and understanding ideas. In that way, the group can generate ideas that are much more than the sum of their parts
- **Mind mapping:** Rather than capturing a linear flow of words, the individual or group captures data, challenges, ideas, solutions, action steps, etc. in both words and pictures. They indicate the relationship among the elements by using a series of branches and links.
- **Forced connections:** It requires the thinker to take a stimulus—like a random object or picture that is unrelated to the challenge—and ask, “When I look at this object/picture, what ideas do I get for solving the challenge?”
- **Praise:** Looks for what is good about the idea and the good things that might result if the idea were implemented. Lists the issues or limitations of the idea in the form of a question (e.g. “How might we reduce the cost?”). Applies creative thinking to overcome the important limitations.
- **Pose problem as a question:** looking at the problem as a problem cannot make our brain thin differently. It freezes the brain. However when the problem is posed as a question, we naturally trigger our brains to start solving the problem, rather than reinforcing it. This subtle shift in language invites solutions automatically.

ii. **Skill set:** A framework that allows innovation leaders to use their knowledge and abilities to accomplish their goals. More than tools and techniques, it requires facility, practice, and mastery of processes. It demands understanding how to participate on an innovation team with others, supporting and protecting the innovation team from superiors and other parts of the organization, setting an innovation strategy for the organization and fostering a culture of innovation—including modeling behaviors that promote a shift in the culture and communicating the vision over and over again.

- **Personalizing:** getting intrinsically motivated, making work your passion can only help in creating the energy that leads to the shared commitment that is so necessary for innovation.

- **Imaging:** use of metaphors, imagery, poetry and other tools to engage an innovative mindset, gain new perspectives, and reframe a challenge.
- **Collaborative Inquiry** is at the heart of innovation. It involves engaging in dialogue to create shared direction, alignment, and commitment, and to propel innovations on a successful trajectory.

iii. **Mindset:** The attitudes and resulting behaviors that allow the tools and skills to be effective. The mindset is the fundamental operating system of the creative thinker and distinguishes those leaders who enable creative thinking and innovation from those who shut it down.

- **Curiosity:** It develops readiness to explore and fuels the acquisition of new information. Asking questions like ‘What if?’ or ‘How can this be done?’ helps to become more solution oriented.
- **Attention:** Looking at the situation from multiple perspectives rather than be instant reactor.
- **Affirmative:** As a leader, instead of criticizing the idea, let the team know what you like in it. Point out the strengths and value of the new solution ensures that the team knows they created something new and useful. It provides recognition and promotes a sense of accomplishment and progress.
- **Tolerance:** Paul Torrance (1979) described “tolerance for ambiguity” as the foundation of the creative thinking that leads to innovation.

Check Your Progress 4

1. What is the difference between innovative and business thinking?
2. Discuss the building blocks of innovative thinking

3.6 Experimenting With Innovation

Experimentation is a vital part of innovation. Experimentation has served as a critical tool for challenging the status quo business models and driving radical changes. As we are well aware that innovation is the process of translating an idea or invention into a good or service that creates value. Experimentation becomes important as it helps to get insights and new reflections. It has been perceived as a search for new value. There are a countless number of approaches to experiment, i.e. exploring opportunities, identifying opportunities, gathering feedback, testing and evaluation ideas/solutions, translating ideas into solutions.

What makes experimentation important or crucial for innovation? Experimentation can be taken as applying innovation at a small scale. It helps to test the assumptions behind the innovation and helps to navigate avoidable uncertainty that is part of any innovation process.

- **Experimentation enables learning:** Through experimentation answers to all questions can be searched. The results enable us to make better decisions about the idea or projects. An idea implemented without any experimentation is based more on thoughts. Experimentation help to gather information to become more authentic.
- **Experimentation enables failure:** Failing is part of innovation, but there should be a recognition of how one fails and how big your failure is. Trying the idea at small scale provide lot of information helping us to avoid making significant failures at implementation stage. Failure is simply a normal part of the experimentation process that brings you a step closer to your goal, even if it doesn't seem that way most of the time.
- **Feedback/Appraisal:** experimentation provides feedback required to shape the idea by reinforcing, modifying, or complementing existing new knowledge. We can incorporate the feedback from experiments in their later versions and can commit to a design early.
- **Experimenting with many diverse ideas is crucial to innovation.** When a new idea fails in on experiment, the failure exposes important gaps in knowledge. Such experiments are particularly desirable when they are performed early on so that unfavorable options can be eliminated quickly and people can refocus their efforts on more promising alternatives.

3.6.1 Elements of experimenting

- i. **Specify the goal of your experiment:** What do you want to achieve with it? Is the experimentation in line with your innovation process? When you have a clear objective it will become obvious what your next steps should be;
- ii. **Define your key assumptions/hypothesis about your idea:** These are the focal points you are trying to prove (or disprove) through testing;
- iii. **Chose metrics** which will provide you with exact data you need to make further decisions and come to relevant conclusions;
- iv. **Testing/Experiment;**
- v. **Collect and analyse data;**

Challenges of designing experiments in innovation

3.6.2 Building an culture of experimentation

If organizations want to have an innovative approach, they need to make experimentation an integral part of everyday life. That means creating an environment where employees can conduct or commission a test, all experiments are done ethically, and managers embrace a new model of leadership.

i. Nurture Curiosity

During a revision of Air Patriots, a game for mobile devices in which players defend towers from attack with a squadron of planes. When Amazon launched a new version of it, the development team was taken aback by the response: The seven-day user-retention rate dropped by an astonishing 70%, and revenue fell 30%. The team discovered that it had inadvertently increased the game's difficulty by about 10%. Amazon quickly shipped a fix, but the developers wondered if making the game easier could produce large *gains* in retention and revenue. To find out, they ran a test with four new levels of difficulty, in addition to a control, and learned that the easiest variant did the best. After some further refinements, Amazon launched a new version—and this time users played 20% longer and revenue increased by 20%. An accident had led to a surprising insight, which became the starting point for new experiments.

Source : <https://hbr.org/2020/03/building-a-culture-of-experimentation>

Above kind of a reaction is less observed in organization as they are still conservative in their approach. However it can be said that emphasizing the importance of successful experiments may encourage employees to focus on familiar solutions or those that they already know will work and avoid testing ideas that they fear might fail. Fear of failures have no place in experimental cultures. Curious, open minded, learner ready individuals can only thrive experimental set ups.

ii. Prefer data to opinions

Experimental results must be accepted even if they clash with existing opinions. It is our tendency to accept good results but challenge or criticize bad results which are not in accordance with our assumptions.

iii. **Give employees freedom and equal opportunities to experiment**

Any and every employee should have the opportunity to experiment with minimal efforts. Training and support be provided to the whole organization. This system gives teams the autonomy they need to try out new approaches they believe are valuable and allows people throughout the company to monitor the experiments and provide feedback in real time.

iv. **Involving top management**

Values in an organization flow like a river. To have a healthy culture of experimentation and optimization, it's imperative that the top management complies. They will realize the importance of experimentation and the need for optimization and automatically allocate sufficient budget for the same. And this will, in turn, make it easier for executives, especially marketers, to execute the thought-through optimization strategies.

v. **Use new technology**

Forward looking organizations should identify and embrace new technologies that can increase the flow of input from external sources and simplify operational work such as the grant making process.

HopeLab, was created by Pam Omidyar (wife of eBay co-founder, Pierre) as a way of combining rigorous research with innovative solutions to improve the health and quality of life of young people with chronic illnesses. HopeLab began pursuing its mission by developing a video game that motivates young cancer patients to comply with the requirements of treatment. The resulting product, Re-Mission, plays like a commercial video game built for fun, but also has proven health benefits. Positive results of HopeLab's randomized controlled trial of the game reveal that Re-Mission improves treatment adherence in patients who play, and these findings have been a major contribution to the growing evidence-base for the emerging field of "serious games." So-called "serious games are now becoming a recognizable part of the gaming landscape.

"Innovation is about courageous experimentation— testing new approaches, tapping into unconventional sources for insight and inspiration. It's why I founded HopeLab. Experiments often fail, which is part of the process. When successful, they can lead to gamechanging discoveries." - Pam Omidyar

Source : <https://www.issuelab.org/resources/9873/9873.pdf>

3.7 Summing UP

- Leadership is the process by which a person influences others to accomplish objectives and direct the organization towards cohesion and coherence.

- Leaderships holds an important value as it generates results by his vision, approach and actions. They tend to increase organizational value in terms of tangible and intangible assets.
- Innovation is very important and much needed attributes of leadership. In present competitive world leader need to innovate and promote the same so as to succeed. To promote innovation leaders need to provide conducive threat free environment.
- Relative advantage, compatibility, complexity, trialability and observability are main characters of innovation.
- Innovative leadership and leadership for innovation are two important components of innovative leadership. Leader's needs to be future oriented so as to face the emerging challenges positively.
- As a leader ones need to promote collaboration and connection for creating an innovation friendly environment
- There is a difference between business and innovative thinking. Business thinking is research fact based thinking while innovative thinking is based on assumptions and expectations from future. It does not base itself on past experience.
- A culture of experimentation needs to be created where every employee is given freedom to propose and test ideas. Such a environment will take the organisation a step close to innovation and eventual success.

3.8 Questions for Practice

1. Prepare a case study on a successful organization identifying their innovation. Throw light on the innovative strategies adopted by the organization.
2. Why is innovative thinking preferred over business thinking? As a leader how can you promote innovative thinking in an organization?
3. Define experimentation. What points need to be remember for creating an attitude of experimentation in the organization?
4. What challenges are faced by the leader due to his efforts of bringing a change in the organizational culture?

3.9 References and Suggested Readings

- Barnard, C. I. (1938). The functions of the executive. Cambridge, MA Harvard University Press.
- Center for Creative Leadership (2002). Benchmarks facilitator's manual. Greensboro, NC: Center for Creative Leadership

- Isaksen II, S. and Akkermans, H.J. (2011) Creative Climate A leadership Lever for Innovation. *The Journal of Creative Behavior*, 45, 161-187.
- Rogers, E.M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.
- Sahin,I. (2006). Detailed review of rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology – TOJET* , 5 (2).
- Williams, M. (2005). *Leadership for leaders*. London: Thorogood Publishing Limited.
- <https://www.ccl.org/wp-content/uploads/2014/03/BecomingLeaderFostersInnovation.pdf>
- <https://hbr.org/2020/03/building-a-culture-of-experimentation>
- https://zengerfolkman.com/wp-content/uploads/2019/08/How-Extraordinary-Leaders-Double-Profit_WP-2019.pdf.
- <https://www.researchgate.net/publication/281445580>.

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS (CISE-3)

UNIT 4: ORGANISATIONAL INNOVATION

STRUCTURE

- 4.0 Learning Outcomes**
- 4.1 Introduction**
- 4.2 Organizational innovation and its requirements**
 - 4.2.1 Developing an appropriate culture for Innovation and change**
- 4.3 Redefining the role of school leadership for promoting innovative environment at school**
 - 4.3.1 Defining school leadership**
 - 4.3.2 The current situation of school leadership**
 - 4.3.3 How Leaders Have To Change**
- 4.4 Redefining the role of school leadership for promoting knowledge creation at school**
- 4.5 Redefining the role of school leaders as wise leaders**
- 4.6 Summing Up**
- 4.7 Questions for Reflection and Practice**
- 4.8 References and Suggested Readings**

4.0 Learning outcomes

After the completion of unit learners will be able to

- i. Discuss the attributes and requirements of organizational innovations.
- ii. Elaborate the means of developing an appropriate culture for innovation and change.
- iii. Define school leadership
- iv. Explain the present situation of school leadership and explain the methods for redefining school leadership.
- v. Give the need and ways of redefining school leadership for knowledge creation.
- vi. Give characteristics and ways of becoming wise leaders.

4.1 Introduction

By this time you all must be well conversant with the meaning of innovation and why it is important for any organization to innovate so as to survive in this competitive world.

Different authors have defined innovation in a different ways, however it is best described as an attitude which allows the organization to see beyond the present so as to create a better future for it. The competitive world in which we all live today does not allow companies to shield themselves from change regardless of their resource base. Though change brings along with uncertainty and more risk but it also creates an opportunity to grow and develop. Change can only happen if a company innovates and for that the organization needs to have an action oriented environment, in which all the employees feel comfortable with innovation and get inspired to do that. It can be put into words that as the determinant of innovation, organizations need to have a positive cultural environment only then they will be able to think differently and create differently.

The primary question that arises in our mind is that why do organizations need to innovate and the answer is simple that innovation is needed for survival and prosperity. Only innovation can contribute to performance or effectiveness of the adopting organization. It is seen as a response of an organization to a change in its internal and external environment or as a presumptive action taken to influence the environment. Through innovations, organizations fit themselves into the environment they are working in so that they are able to have a great future. Organizations need to adopt innovative practices emphasizing democratic innovation so that all employees can make their contributions.

4.2 Organizational Innovation and Its Requirements

In an organizational environment, examples of innovation are the implementation of ideas for restructuring, or saving of costs, improved communication, new technology for production processes, new organizational structures and new personnel plans or programmes (Kanter, 1983 cited in West and Farr, 1990; Robbins, 1996).

Organizational innovation can be defined as the introduction of something new (an idea, product, service, technology, process, and strategy) to an organization. Lam (2006) defines organizational innovation as “to the creation or adoption of an idea or behavior new to the organization.”

Likewise, Damanpour (1991) defines innovation as “adoption of an internally generated or purchased device, system, policy, program, process, product, or service that is new to the adopting organization.” Although the aim for innovations is making something better, not all innovations are successful.

What drive organizational innovation? Four areas have been identified that drive the same. They are:

- Leadership : the determiner
- Organizational culture : the enabler
- Structure : fosters innovation
- Competitive environment

4.2.1 Developing an Appropriate Culture for Innovation and Change

There is a need of developing a culture where every teacher believe that the need to improve not because they are not good but because they can do better with the change. Educators need to understand the value of change before its implementation because if the value of the particular change is known, they are more likely to support and promote it. People need to understand the value of change and innovation so that they are intrinsically motivated to embrace it. This would lead to sustainability and transformation in the educational institutions. During the initial implementation stage change is very difficult in every organization. The onset of change is loaded with challenges. If one lacks knowledge on initiation of change and does not have a clear vision this would add to the apprehensions already existing.

True leaders need to take tough decisions instead of trying to please everyone. Personal reflection can only lead to a mindset shift and once it is achieved the several sustained change initiatives that may follow would result in a culture which is better for both the students and the employer. A leader needs to identify the areas of challenges with reference to his organization and then developer roadmap for the change in their context before developing the roadmap the leader need to have to your answers for the following questions

1. What is the starting point?
2. What are the organizational factors that may influence the process?
3. What kind of organizational cultural changes are required?

4. How can the teachers be motivated to embrace change?

These are a few driving questions for which the answers should be looked into.

Taking the first step forward

It is often felt that innovations fail when they are perceived as not being aligned with the existing cultural values and beliefs of a school. If the employees of the school realize or feel that the changes are being imposed externally on them, they show reluctance towards the same. Hence if we want innovations to flourish in a school they have to be allied with or developed from the problems or ideas which are central to the core values and goals of a school, the community and the people within it. The initiative and the drive have to come from within the school itself to be successful. The beginning to change must employ a cycle of insight, invention application, reflection and communication.

- **Insight:** This involves identification of the problem, understanding the context and exploring the different routes of finding solutions to the problems being faced. At the same time the different tools that can be used to you apply the solutions are also identified. This is this stage when all the stakeholders sit together and deliberate on the issues faced by the organization so that the problems are identified on the collaborative front. This also helps the addressing of concerns of all involved in the functioning of the school.
- Once the problems are identified, the second step involves the process of developing new ideas and vision practices. Here diverse forms of expertise and knowledge is shared to develop new ideas It also requires a divergent thinking approach and employing alternative methods and strategies for development of ideas and a future vision. It also sets the stage to break the existing habits of mind and attitudes towards problem solving.
- The next stage is the application of the strategy and new approach using the existing strategies. The role of leader becomes very critical to sustain the innovation and embedded the same in organizational culture.
- For strategies to be effective, regular review and reflections are must. The strategies must be refined as per the observations made. This would demand an effective social and support network. Reflections also help us to identify new ideas and opportunities to begin

the next cycle of innovation. Communication and networking are critical elements here to ensure that the innovations are diffused throughout the system with a similar perception

Supporting school leadership autonomy

School autonomy can play a positive role in implementation of educational reform and provisions of leadership for improved innovation at school. There is a need of clearly defining and delimiting the core responsibilities of school leaders. They need to focus on those domains that are most conducive to innovation and change. In the absence of such clarity the school autonomy may lead to role overload by making the job more time consuming and increasing the administrative and managerial workload. Effective School autonomy requires support. Devolution of responsibilities needs to come with provisions of new models for a more distributed leadership, new types of training and development.

Taking vision to action

Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world. Joel A. Barker

Establishing your vision when beginning the change process is very important. Effectively good leaders understand the importance of shared vision and the need to articulate the goals and expected outcome. If we have a well articulated vision, it sets the stage for the time and effort required to follow through on what might be a very long journey otherwise. Leaders are always forward thinking and in order to effectively give the change a shared vision must be created. Effective leader are able to bring their people into the future because they engage in the oldest form of research i.e. they observe the human condition (Kouzes & Posner, 2002).

Ryan (2009) elaborated that great leaders give real thought to the values ideas and activities they are most passionate about. They realize their vision by setting realistic demanding goals and then going after them with the help of other talented people who are equally committed and engaged. According to him the compelling visions can truly change the world but staying invested in them can be very difficult during hard times. Mission statements do not lead to sustainable change or intentionally design schools. Forward-thinking visionaries who persistently strive to implement a vision through actions do.

Taylor (2014) outlines 10 crucial elements to successfully move from vision to actionable change:

1. **Make it a priority:** Make innovation a priority for the organization.
2. **Strategize strategic success:** Understand how the vision aligns with the strategic goals of the organization.
3. **Communicate a new reality:** Communicate to the organization what achieving the vision will mean.
4. **Inspire the team:** The leaders must inspire the organization to move from where they are to the promise that the vision brings.
5. **Embrace the vision:** The vision should be discussed and supported at all levels of the organization.
6. **Be loud and proud:** Speak about the new changes whenever possible.
7. **Spread the word:** Communicate the vision at every opportunity.
8. **Own it and live it:** Leaders must live the vision and not just pay lip service to it.
9. **Drive the train; don't watch the parade:** Leaders must get their hands dirty and get involved with the details.
10. **Don't just delegate everything:** Leaders model desired practice. They work tirelessly to model expectations during the planning and implementation phases of the change process while empowering others to embrace the needed change.

Check Your Progress- 1

1. What is organizational innovation?

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2. List out the critical elements which enable one to change vision to action.

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3. How can an organizational culture for innovation be created?

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4.3 Redefining the Role of School Leadership for Promoting Innovative Environments at School

Leadership has very important role to play for any institution. Similarly school leadership has a vital role in improving the school outcomes by influencing the motivation and work capacities of a teacher. School environment and climate is also influenced directly by the school leadership. If we want to improve the efficiency or equity of schooling or if we want to create an innovative environment at school, school leadership has a very critical role to play. School leaders helps to adapt school to be changing external environment School leadership is a kind of a bridge between the intern school improvement processes and externally initiated educational reform.

The needs of the society are changing every day and as a country, we want our education system to adapt to these changes so that the expectations of the society are met by the school. School leadership policies need to be adapted to the new environment by addressing the major challenges which have arisen over the past decade. We need to develop new conditions for school leadership better suited to respond to the current and future educational environment.

Decentralization, school autonomy are new terms which have found great significance in education system. The diversity of students in the schools have increased and this has put schools under additional pressure to plan and deliver outcome based teaching learning process.

4.3.1 Defining school leadership

If we analyse the various definitions of leadership, the central element present in almost all of them is that you wish it is it that concept wit involves the process of influence and this influence is social in nature it's meant to structure the activities and relationships of your organisation it is an intentionally activity as it is based on goals or outcomes established by your organisation.

Many a times the terms school leadership, school management and school administration are used interchangeably. The concepts are found to overlap with each other. However differences do exist in them. Managing is basically involved with getting the work done while the leadership involves changing or running the organisation by shaping the people's attitude, motivation, behavior. Leadership is future oriented in nature.

School leadership in no way should be confined to school principal only. Leadership is a broader concept where it is distributed among different people and often goes beyond the boundaries of a school. School leadership can encompass people occupying various roles and functions such as principals, deputy and assistant principals, leadership teams, school governing boards and school-level staff involved in leadership tasks.

4.3.2 The Current Situation of School Leadership

Contextual Differences:

School leadership faces different types of challenges depending on the school context in which they are working. Students background, schools location, school size, school type and school level effect the type of leadership that can be observed. Primary schools tend to be smaller and have different challenges then a larger Secondary School. At a primary school, the school leader is able to spend more time in the classrooms and can monitor the teachers closely where as in a Secondary School there are school coordinators and department heads that are actively involved in the curricular issues whereas the school leader exert a indirect control over the functioning of the school.

Small Size Workforce

Small number of individuals in principal positions makes it feasible to provide training, suport and incentive to them. It turns out to be a very cost-effective human capital investment as the quality of the leader directly influences the motivation, attitude and behavior of the teachers and indirectly contribute to the better learning of the students but however this has some serious concerns. School leadership workload has intensified over the last few years. The present job profile is being defined by a new for larger and more demanding sets of rules. School leaders are expected to take on enhanced administrative and managerial roles, manage financial and human resources, manage public relationship and build collaborations, innovate and think out of the box. It is not possible for a single school principal to do such a high level of expected multitasking. The present work load of a school principal goes beyond what one single individual can possibly achieve successfully.

From Principalship to Leadership

The journey of a school principal turning into a leader is a very long one. The position of a principal remains an essential feature of almost all schools but however the changing expectation has raised the need to develop new forms of school leadership which are better suited to respond to the current and future educational environment. This means that there is a need to support and retrain the school principals who are currently on job as most of them joined the school in educational environment which was fundamentally different from what we find today. The roles of responsibilities of principals have evolved and this means that they need in service training to develop and update their skills and more incentive to remain motivated on the job. At the same time we need to train and prepare the next generation of school leaders.

The concept of student centered, technology rich instruction is gaining the momentum across the country. Even the new education policy 2020 stresses on the same. We need to devise innovative new pedagogical strategies as well as redefine the learning environment of the school so as to achieve this vision of our national education policy. There is a felt need of establishing innovation teams at each school who will be able to carry out need assessment, device a student service plan, a professional development plan and other crucial elements to conceptualize and communicate their vision to the stakeholders. School leaders are expected to facilitate the change in the organizational structure and cultivate a school culture which is receptive of change and innovation. Further they play a very important role in how the employees perceived change and innovation. It has been noted that the culture of continuous innovation depends on the capacity of a school to continue learning including learning from each other throughout the duration of educator's career.

Change in education is described as a process which enables innovations to be adopted by the school in staff and transform the school culture to be receptive of these changes (Fullan, 2007). The process of change can be described in phases of initiation, implementation and institutionalization and school leader is charged with responsibility of leading the effort on the ground. Hence it can be inferred that the school leaders are the change agents of a school facilitating the shift in culture which allows the innovation success. This behavior requires the leader to foster risk taking, and protect the staff members who take risk suggesting that the leader

must possess the high degree of comfort with uncertainty and conflicts as innovations are implemented (Marzano et al.,2005).

4.3.3 How Leaders Have To Change

Leaders as Learners

As a leader we need to admit that there is no perfection in any position. A leader should have an attitude of continuous learning and engage in both formal and informal experiences to improve their practice. This will ultimately have a positive effect on their ability to bring about change and innovation in the organization. Leaders need to make time to learn and get better on daily basis and make their learning visible as an inspiration to others. This can only happen if a school leader develops a passion for his job and see continuous improvement in the same.

Develop Adaptability

Change is inevitable. A school leader must embrace the sense of flexibility and openness to change as per the need. The best leaders will be proactive and create change before the external influences forces it. The ability to adapt to the array of situational challenges and profession is pivotal to accomplish one's vision. School leaders need to have mental models that facilitate understanding about the complex effect of the behaviors on multiple objective and that stresses the importance of balancing competing values. They need to appreciate and take advantage of opportunities to increase their self awareness skills and behaviors and at the same time need to develop the skills before they are needed. Success in life is interwoven with the ability of the leader to adapt in order to survive, that evolution through adaptation can only create better innovative leaders.

The most influential and effective leaders are those who

- Model expectations.
- Talk less and do more.
- Create a shared vision and implement it.
- Believe in taking calculated risks.
- Do not fear failure and learn to 'fail forward.'
- Work tirelessly to build positive relationships with others.

- Collaborate for the greater common good.
- Constantly learn and reflect.
- Help others see the value in change.
- Focus on solutions as opposed to excuses

Developing Distributed Leadership

There exist polarized forms of organization in a school: a **bureaucratic model and a non bureaucratic model of leadership**. In the bureaucratic model of leadership, the roles for teaching staff are fixed and rigid and the rules are clearly specified. There exists the hierarchical power relationship whereas in a non bureaucratic model there are fewer rules, structures and hierarchy is not observed. This model provides for greater flexibility in terms of curriculum approach and school practices. For innovations to happen in organization there is a need for a clear Central management and distributed autonomy to diverse groups and leadership.

Several keys points can be identified here

- Leaders should have a clear understanding of the problems and opportunities. It should come from those who have passions and knowledge to take the charge and motivation to bring innovation. This is the biggest challenge: to identify the passionate, knowledgeable and influencers.
- Though leadership may come from anyone, but still there is a need to have a strong central management to ensure cohesion, rigour and diffusion. The empowered professional educators and students many take responsibility for leading the innovation, a management structure allows the model to operate in a coherent and organized manner. Senior management plays a vital role in promoting innovation by providing the support, resources and communication channels. They play a critical role in creating permission for radical change by facilitating system-wide communications, and managing the risks around innovations.
- There are many new models of ideas generation and dissemination that are being used by other fields. These tools and practices offer new possibilities for learning within communities which enable teachers and students alike to create and share content, ideas

and approaches. Such platforms can be explored where young people learn a practice through creating, tinkering, sharing and building on one another's creations.

Supporting the Passionate Minds

People who embrace innovation and change and drive the same with their passion needs to recognized and promoted. Such individuals have the zeal to overcome the barriers and resistances as they are strongly intrinsically motivated.

- They identify the opportunities and challenges
- They have a keep going attitude.
- They provide support to others
- they help minimize and share risks
- they share findings and impacts internally and externally with other innovative practitioners or networks
- they sustain and diffuse the innovation
- they help colleagues and students to develop their own innovative practice or projects.

Such an attitude can only drive innovation and change. It is important to mention that such an attitude does not come from role positions but are born due t internal desires and beliefs. School leaders donot have appoint such innovators but have to provide them the support and encouragement. Leader needs to give them the platform to change their enthusiasm into reality. There is a need to nurture the diverse passions, interests and motivation of different teachers as they identify different problems and solutions they wish to develop.

Professional Development of Teachers

Teacher needs to be identified as professionals. There is a need to redesign the teacher development programmes in light of the expectations of innovation and creativity. The most important problem is that teachers identify themselves as practitioners and not intellectual educationist who are able to identify problems and work on their solutions. For development of a culture of innovation, the perception of teachers has to be changed with an emphasis on de contextualization. The role of teachers as end user innovators can be explored. Hippel (2005) argued that empowering end-user innovation encourages teachers to freely reveal their

innovations, using methods such as those found in open source communities, often sharing them with others within networked communities. The process of sharing practice is continuously reborn and developed through use and need approach. Teachers need to be empowered through distributed leadership, given a role in mobilizing change and try alternative practices and approaches to share them.

The second approach can be complete redesigning of professional development programme. New models of professional learning tied up with ongoing cycles of innovation and development needs to be devised. The need, then, is for professional development to provide challenge and support 'in context' and to create cultures in which ideas and possibilities are widely discussed, explored and tested in practice. Teacher learning therefore needs to create opportunities for and promote acceptance of the exploration of a wide range of different ideas, tools and practices. As well as playing a role in nurturing the dispositions and capacities of teachers to innovate, professional learning also needs to be integrated into the cycle of innovation in schools so as to increase the likelihood of wider adoption and adaptation. Following aspects need to be kept in mind

- school culture needs to strongly support professional development activities to allow time for innovations.
- Innovative ideas need to have context relevance.
- Leaders need to be supportive of ideas.
- Debates on nature, purpose and potential future changes in education in order to provide an informed context.
- Success should be evaluated in term of long term success.

Establishing Learning Communities

If we wish to sustain innovations in schools then educators need to look beyond the boundaries of their school. They need to establish strong networks of learning communities. Such communities would enable educators to present their problems and help in distinguishing between new and transformative problem. Identification of mediating organizations and individual is important to give an insight into practice. These communities turn out to be a constant source of encouragement and provide formal and informal opportunities of sharing of

ideas, approaches, vision, success stories and failures. Also they turn out to be learning spaces for engagement in open and honest ideas sharing that leads to development of trust and questioning.

Along with this there is a need of providing them with opportunities to work with each other through the processes of collaboration and co working for a better perspective and understanding.

Stress should be laid on establishing innovation ecosystems/ hub consisting of diverse individuals from different fields who share the common interest of creating social innovations. This help to find and explore new opportunities and try ideas, sharing of innovative ideas and practices, and provide support to them. Members can act as catalyst of change also. It also leads to development of new partnerships and the creation of local tools. Identification of shared problems serves to foreground the multiple ways in which individual problems might be challenged.

Sharing of innovations creates a general pool of resources and support promoting local and national ecologies of innovation. It help to communicate the principles and reasons for the innovative practice, in order to better help others to decide whether and how to adapt and appropriate it for their own specific circumstances. Sharing of ideas is needed to create diffused innovation.

Encouraging Risk Taking Attitude

It is not necessary that innovation always lead to success. Teachers need to be trained in practical risk management. Rather than moving to wholesale change, piloting and prototyping should be encouraged to allow lower risk taking. Regular monitoring of impact and distinct break points allow identification of issues. Early identifying supporters from within and beyond the school, drawing on evidence, and developing clear methods and approaches to communication become extremely important in managing risk. As a leader one need to ensure that the financial cost of innovations is met and teachers are given ample time to find trial new approaches.

Check Your Progress-2

1. Define school leadership

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2. What is the need of redefining the role of school leadership for innovation

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- 3 Explain any three ways the school leader needs to change in context of innovation?

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4.4 Redefining the Role of School Leadership for Promoting Knowledge Creating at School

Knowledge Creation at School

Knowledge building is a critical capacity for all organizations, and especially for schools and school systems. Schools, however, are historically weak at knowledge sharing within and across schools. Knowledge has to be viewed as a social phenomenon (Brown and Duguid, 2002). It is the people, communities organizations and institutions who given knowledge its meaning and importance. Hence the organizations need to create a viable social system involving all stake holders. Leading in a culture, does not mean placing changed individuals into unchanged environments. Change leaders work on changing the context to create new settings conducive to learning and sharing that learning.

Nonaka and Takeuchi (1995) detailed the mobilization of newly created knowledge within an organization. They explained knowledge as tacit and explicit. As we collaborate, these types of knowledge interact and create a new knowledge as an outcome, this is called knowledge conversion. Mobilization of created knowledge between different levels of organization is also important. New knowledge is created as shared at various levels of organization through expanding communities of interaction crossing all boundaries. Harris (2008) highlighted two key dynamics of amplifying knowledge throughout an organization: 1) externalization of tacit knowledge and 2) movement of knowledge through an organization (i.e., individual, group, organization, and inter-organizational).

Professional Learning Communities

Organizations have invested heavily in technology but little in knowledge sharing and creation. In educational organizations creation of Professional learning communities is a welcome step. School capacity is a critical aspect and comprise of individual teacher knowledge, skills and dispositions, professional learning community (across teachers), program coherence, technical resources, and principal leadership. The role of the leader is to ‘cause’ the previous four components to get better and better on a continuous basis. At school levels, continuous comprehensive evaluation mechanism where teachers and the school principal collectively examine student performance data to make a critical sense of it and develop action plans on its basis and take action which are monitored.

Building Peer Networks

Team teaching activities wherein teachers collaborate and visit each others classrooms either for observation purpose or demonstration teaching or consultant teaching. Such associations are found within the school or outside the schools. This collaboration leads to development of new set of pedagogical practices. The school leaders initiate such activities and often associate also with the teachers.

Building buddy groups can also be an initiative. The school leaders, senior administrators meet occasionally in each others schools or travel to other districts inside and outside the city to observe specific instructional practices. Visits and peer advising are used as management strategies for teachers within their buildings. Five sets of interrelated strategies are used: nested learning communities, principal institutes, leadership for instruction (support and study 8 groups), peer learning, and individual coaching are used as knowledge creation and exchange opportunities.

Managing the Process of Creating New Knowledge

The characteristics of knowledge-creating schools include:

- enthusiasm for continuous improvement
- awareness of external environment
- sensitivity to students’, parents’ and governors’ preferences

- coherent, flexible institutional planning
- flat hierarchies and devolved power
- recognition for teachers' expertise
- informal staff relationships, with the accent on expertise not status
- high volume of internal debate and professional networking
- professional knowledge-creation seen explicitly as a whole-school, regularized process
- regular opportunities for reflection, enquiry and dialogue
- “internal hybridization” (job-rotation, cross-functional teams)
- use of temporary developmental groups
- culture of ‘no blame’ experimentation and challenge
- encouragement of diversity and deviance
- partnerships
- positive tension between control and liberty, freedom and responsibility

Knowledge is created in four ways according to Hargreaves: through socialization, externalization, internalization or a combination of methods. Leaders might wish to consider whether opportunities are provided to:

- share experience through apprenticeship models or mentoring
- develop tacit knowledge into explicit knowledge through collaborative reflection
- develop ‘learning by doing’ where explicit knowledge becomes implicit
- network with people from different organizations

Check Your Progress-3

1. What do you understand by knowledge creation?

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2. How can a teacher be developed as an active knowledge creator?

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4.5. Redefining the Role of School Leaders As Wise Leaders

Organizations today need wise leaders. If leaders wish to realize their full potential, attention to temperament, mind and body is needed. Leaders need to act on their values, knowledge and judgment more wisely. They need to examine open mindedness which eventually guides them in terms of basic orientations and actions.

4.5.1 Characteristics of Wise Leaders

- **Having a wider perspective:** instead of having a self limiting point of view, a wise leader exhibits the character of having a different perspective on issues. They have multi dimensional perspective.
- **Donot confuse knowledge with power:** an unwise leader believes that he should know everything. Such an attitude creates a force field whereby people around them cannot challenge or break through. All knowing leaders only regard their opinion as final instead of listening to others. The wise leader knows that they neither can, nor need, to know everything. Such leaders are comfortable for others to know more than they do about something and don't see it as a sign of weakness.
- **Exhibit courage:** a wise leader make decisions that are underpinned by honest, commitment and fair. The wise leader realizes that their own example and behavior are critical in setting the ethical tone for their organization. Where leaders behave in such a manner, those who follow them are much more likely to be inspired to live up to similar values and be a positive influence on everything that happens in that organization.

4.5.2 Developing Wise Leaders

Wise leaders are self aware, aware of their prejudices, their social conditioning and thus able to moderate the tendency to be over-optimistic with their intuitive instincts. Management is often treated as scientific in nature. However if one wish to add wisdom to the decision making aspects then it would be best described in form of a three dimensional structure involving rational capability, intuitive capacity and humane character. The intuitive nature of leader is explained as encompassing experience, self understanding and a metaphysical quality. A wise leader is future

oriented due to his/her foresight, use reason, experience and have an orientation beyond self interest. For adding wisdom into leadership following points should be considered.

Shift Focus towards Longer term Strategies

A wise leader needs to evaluate long term effects of decisions instead of focusing on short term gains. Whenever presented with a problem or at a crossroad, a wise leader asks these questions before arriving at decisions: will the decision have any effect on the organization in long-run? What will be the long term effects?

Experiential Learning

It is important to take learning experience from past events. One needs to reflect on situations to identify the causes of success or failure. Where did I go wrong? How can improvement be done? Leaders create new learning opportunities for themselves. Failure only reveals room for improvement and opportunities to learn.

Shift Your Perspective by Connecting With a Noble Purpose

Wise leaders have a holistic perspective: they see the world as an interdependent and interconnected web of life with the help of **integral thinking** ("both ... and" as opposed to "either ... or") they try to overcome polarized approach. They are deeply aligned with their vision, which gives their life a deep meaning and purpose that transcends their ego. Wise leaders strive to change and broaden the perspective of their employees and stakeholders by explaining how the long-term survival of the business depends on using all of its resources to creatively solve global issues such as social inequalities, climate change and pandemics.

Act authentically

The actions of a wise leader are aligned with their goals. They act authentically and ensure that their words and behaviors are always in congruence with their true feelings and values. They match their actions with the dynamic context of their organization and the society.

Preferring emotional intelligence quotient

Wise leader take decisions with ethical clarity. Develop the ability to act with prudence and don't let strong emotions like fear or greed shape their decisions. Wise leaders needs to include compassion in their decisions and bring heart, mind and soul together.

Be motivated by enlightened self interest

Wise leaders are not selfless; rather, they are motivated by what we call enlightened self-interest. Instead of reasoning "How does this benefit me?" They ask themselves: "How does this benefit all of us?" They willingly contribute to society as a whole knowing that by doing so they would reap rewards for themselves and for their organization.

Check Your Progress- 4

1. What are the characteristics of wise leaders?

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2. What is the need of developing wisdom?

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4.6 Summing UP

- Organizational innovation involves application of a new ideas to an organization. Organizational innovations are driven by leadership, organizational culture, organizational structure and a competitive environment.
- For sustainability and transformation in educational organizations educators need to value change and develop intrinsic motivation to bring about the same. Leaders need to prepare a road map for the implementation of change and take tough decisions.
- Any innovation or desired change must align with the school ethos and vision. As if it is felt as external to organizational culture then it may be very difficult to implement the same. The beginning to change must employ a cycle of insight, invention application, reflection and communication.

- School autonomy can play a positive role in implementation of educational reform and provisions of leadership for improved innovation at school. There is a need of clearly defining and delimiting the core responsibilities of school leaders.
- Establishing your vision when beginning the change process is very important. Effectively good leaders understand the importance of shared vision and the need to articulate the goals and expected outcome. If we have a well articulated vision, it sets the stage for the time and effort required to follow through on what might be a very long journey otherwise.
- Many a times the terms School leadership, School management and school administration are used interchangeably. The concepts are found to overlap with each other. However differences do exist in them.
- The concept of student centered, technology rich instruction is gaining the momentum across the country. Even the new education policy 2020 stresses on the same. We need to devise innovative new pedagogical strategies as well as redefine the learning environment of the school so as to achieve this vision of our national education policy.
- Leaders need to develop as learners and develop adaptability to change to develop a effective leadership. For innovations to happen in organization there is a need for a clear Central management and distributed autonomy to diverse groups and leadership. People who embrace innovation and change and drive the same with their passion needs to recognized and promoted.
- Professional development programme needs to be redesigned. They should provide challenge and support ‘in context’ and to create cultures in which ideas and possibilities are widely discussed, explored and tested in practice.
- There is a need to develop strong well connected learning communities which may serve to provide a platform for collaboration, sharing of ideas and co working.
- Knowledge building is a critical capacity for all organizations, and especially for schools and school systems.
- Wisdom in leadership is pillared on three dimensional structure involving rational capability, intuitive capacity and humane character.

4.7 Questions for Practice

1. Elaborate on the concept of organizational innovation? What changes are needed to ensure adoption of innovative practices at organizations?
2. In light of innovation, why do we need to redefine the existing school leadership. How can this be visualized.
3. How is knowledge creation a social phenomenon? What changes are required in the approach of leadership to change schools to a knowledge creating hub?
4. Why do we need to include wisdom into leadership? How can this be brought about?

4.8 References and Suggested Readings

- Brown, J. S. and Duguid, P. (2001) 'Knowledge and Organization: A Social-practice Perspective', *Organization Science* 12(2): 198-213.
- Damanpour, F. (1991) Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *Academy of management Journal*, 34, 555-590.
<http://dx.doi.org/10.2307/256406>
- Fullan, M. (2007). *The new meaning of educational change* (4th ed.). New York: Teachers College Press.
- Harris, A. (2008), "Distributed leadership: according to the evidence", *Journal of Educational Administration*, Vol. 46 No. 2, pp. 172-188.
- Hippel E.V. (2005) *Democratizing innovation*. MIT Press, Cambridge, MA
- Kanter, R.M. (1988). When a thousand flowers bloom: structural, collective and social conditions for innovation in organizations. *Research in Organizational Behavior*, 10, 169-211.
- Kouzes, J.M. and Posner, B.Z. (2002), *Leadership Challenge*, 3rd ed., Jossey-Bass, San Francisco, CA.
- Lam, A. (2006) Organizational Innovation. *Oxford Handbooks Online*.
<https://doi.org/10.1093/oxfordhb/9780199286805.003.0005>
- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School leadership that works: From research to results*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Nonaka, I and Takeuchi, H, 1995, The knowledge-creating company, New York, Oxford University Press
- Robbins, S. P. (1996). Organizational Behavior: Concepts, Controversies, Applications (7th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- West, M.A. & Farr, J.L. (1990). Innovation at work. In West, M.A. and Farr, J.L. (Eds), Innovation and Creativity at Work: Psychological and Organizational Strategies (pp.3-13). Chichester: Wiley.
- <http://www.ascd.org/publications/books/117034/chapters/Creating-a-Culture-of-Innovation.aspx>
- <https://www.nfer.ac.uk/publications/FUTL20/FUTL20.pdf>
- <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.131.8905&rep=rep1&type=pdf>

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS (CISE-3)

UNIT 5: SKILL DEVELOPMENT FOR CREATIVITY AND INNOVATION

STRUCTURE:

- 5.1 Learning outcomes**
- 5.2 Introduction**
- 5.3 Creativity and innovation**
 - 5.3.1 Creativity and innovation in education**
- 5.4 Teachers and creativity/ innovation in education**
- 5.5 Skill development of teachers: New requirements for creativity & innovation**
 - 5.5.1 Pre service and in service training techniques**
 - 5.5.2 Promoting meaningful connections and collaborations**
- 5.6 Summary**
- 5.7 Questions for Practice**
- 5.8 References and further Readings**

5.1 Learning Outcomes

After studying this unit, you will be able to:

- Define creativity and innovation
- Elaborate creativity and innovation in context of education
- Explain the role of teachers in developing creativity & innovation in education
- Suggest pre service and in-service teacher training techniques for skill development
- Discuss the strategies to ensure collaboration and connections for innovation.

5.2 Introduction

Do you know what the challenges before the present education system are? Why are we unable to win Nobel prizes? Why are we lagging behind in innovation & research? Remember that Education has always to serve the needs of society and is indispensable for establishment of a just and balanced society. Educational system has to be comprehensive, stable and sustainable & evolve continuously to meet the challenges of the society. For a systemic, consistent evolution, teachers are expected to innovate the theory and practice of teaching and learning. By facilitating creativity and innovation in classrooms, teachers empower the students and make them responsible for their own learning. This transforms them to be active learners. Education system has to give them opportunities to think of better ways of doing things, formulate new ways and approaches so as to maximize learning outcomes.

5.3 Creativity and Innovation

Creativity has always being studied as a multidimensional construct involving cognitive, affective and personality traits. These aspects interact with each other to foster individual thinking and creative styles and find varied expression. This led to analysis of creativity in different ways. Cognitive aspects are related to divergent thinking skills i.e. fluency, flexibility, elaboration and originality. Personality variables associated with creativity are an amalgam of positive characteristics, such as curiosity, tolerance towards different ideas, autonomy, imagination, self-confidence, persistence, motivation, and others (Almeida & Wechsler, 2015; Plucker & Renzulli, 1999). It is the ability of an individual to manifest his/her creative origin into a product. Thus creativity has to be understood as a process that has certain specific characteristics and leads to the creation of the new, and the interpretation of creativity as a potential, an internal resource of an individual. Svitlana O. Sysoieva defines teacher's pedagogical creativity as a personality-oriented developmental interaction of subjects of educational process (a teacher and a pupil/student) caused by specifics of psychological and pedagogical relations between them and aimed at the development of creative personality of a student and the increase of the level of teacher's creative pedagogical activity. Teacher's pedagogical creativity is a condition for the formation of the students' creative personality, and the educational technologies designed by the teacher are the appropriate means. Creativity is identified as a psychological process including the finding of novel idea or concept, while many composite variables appearing as researchers investigate in the large display of current talent

fields of creativity (Milbrandt & Milbrandt, 2011). Torrance's (1999) view, creativity divided into three core parts, so there are three characteristics to verify creative behavior: creative abilities, creative skills, and creative motivations.

Innovation

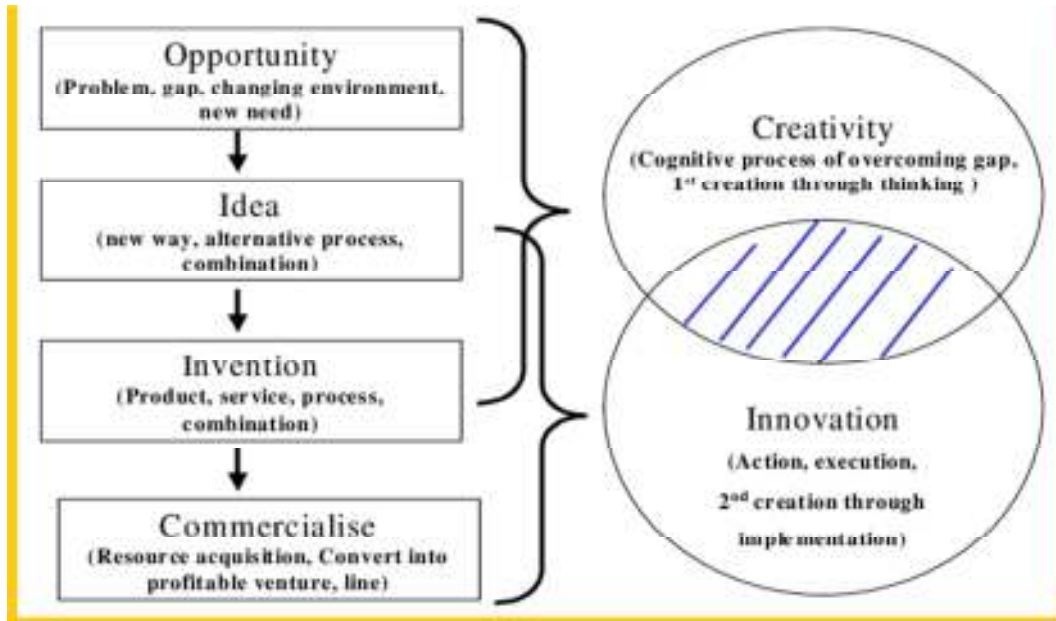
Innovation has always been valued as an individual trait. Innovation has been defined as the development of the product or practice of new and useful ideas to benefit individuals, teams, organizations or a broader range of society (Bledow, Frese, Anderson, Erez, & Farr 2009). Csikzentmihalyi (1996) gave his definition of innovation as an idea or creation that changes or modifies an existing area and is supported by professionals inside the exacting dispute area. Innovation, therefore, is to be regarded as an instrument of necessary and positive change. Any human activity (e.g. industrial, business, or educational) needs constant innovation to remain sustainable. Innovation has been understood as the "implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organization or external relations" (OECD, 2005)

What is the relationship between creativity and innovation

Creativity and innovation are interrelated. Creativity is seen as the infinite source of innovation and innovation can be perceived as the application and implementation of creativity. Major question that arise in one's mind in relation to these two concepts are Is innovation different from creativity? Is creativity a requisite for innovation or can these operate independently? Creative efforts benefits from originality whereas innovations requires originality as an important factor in effectiveness. (Runco,2007). Many a times both constructs are regarded as synonyms but however doing so make us unable to recognize several important points that distinguish them. Creativity requires an appropriate idea,insight or solution to the problem, while innovation requires implementation of the idea. Innovation requires overcoming of a number of barriers or steps for implementation. (Zeng, Proctor, & Salvendy, 2011).

It can be said that creativity is the first phase of the innovation process or as the source of innovation. Both require rupture of conventional thinking and attempting to achieve convergence from divergence. Creativity demand novelty and originality whereas for innovation the idea may

not be novel but has to be original for that particular context. If we see the motivation angle creativity is driven by intrinsic motivation while innovation results from extrinsic motivation.



Source: Pretorius, Millard, “Creativity, Innovation and Implementation: Management Experience, Venture Size, Life Cycle Stage, Race and Gender as Moderators”, 2005.

5.3.1 Creativity and Innovation in Education

The need of educational innovations has become very acute as it is believed that nation’s social and economic well being depends on the quality of education in its schools. With the emergence of knowledge society, digital transformations, technology invasions calls for high skill profiles of educators and level of knowledge. Education systems are required to be both effective and efficient, or in other words, to reach the goals set for them while making the best use of available resources” (Cornali, 2012). Though widely accepted that innovation and creativity in education is the need of the hours, the actual pace of educational innovations and their implementation has been very slow. There has been very little, if any, improvement in the educational outcomes over the last decades. The present education system not only needs innovation but also a large enough scale to serve millions of students and teachers. Our education system needs to focus on

innovations on raising quality of teaching-learning at all levels. The questions that need to be addressed are that how to integrate innovations into our struggling school environment? How to build a world class education system? Why, having so many innovators and organizations concerned with innovations, does our education system not benefit from them? What interferes with creating and, especially, implementing transformative, life-changing, and much-needed innovations across schools and colleges in this country?

Sintapanon (2009) mentioned that creating innovation in education is vital for learning because it helps learners understand content and lesson clearly. Learners develop their learning processes which affect their desirable characteristics. Hence, creating educational innovation needs to be studied in each type of innovation. Most of the education program requires the students to take course emphasizing the abilities to design, develop, implement, and evaluate educational innovations. Creativity and innovation in education are not just an opportunity but a necessity

The National Education Policy 2020 stresses on identify and foster the unique capabilities of each student by promoting creativity and critical thinking to encourage logical decision-making and innovation. The new education policy stress on innovation and creativity by emphasizing that the higher education must form the basis for knowledge creation and innovation thereby contributing to a growing national economy. Higher Education Institutions will focus on research and innovation by setting up start-up incubation centres; technology development centres; centres in frontier areas of research. HEIs will develop specific hand holding mechanisms and competitions for promoting innovation among student communities. The policy empowers the faculty of HEIs to conduct innovative teaching, research, and service as they see best. This will be a key motivator and enabler for them to do truly outstanding, creative work. In order to promote creativity, institutions and faculty will have the autonomy to innovate on matters of curriculum, pedagogy, and assessment within a broad framework of higher education qualifications. Teachers have to attract students' interest and attention in a new way, and as a result the development of creative approaches is called for (Simplicio, 2000).

Further the policy recognizes that the culture of rote learning has to be done away with. There is a need of developing an educational environment that inculcate conceptual understanding to promote innovation and creativity. This can only be visualized if the present curriculum is revamped. The practice of assessing the students on the basis of absorbed information

reproduction has to be replaced by the one that measures the analytical skills of the students. This demands more flexible and best of multiple assessments that primarily test core capacities. NEP proposes that student be given flexibility of subjects so that they are able to explore fields. Such a change would give students more time to invest in innovative and research based activities and adopt research.

To innovate, it implies that one has the ability to look beyond the present and develop new ideas and deal with problems in new ways. The purpose of innovation is to create something new qualitatively or quantitatively. Innovation demand three majors steps: an idea, its implementation and the result of implementation. Innovation in education can be in form of a new pedagogical theory, methodological approach, teaching strategy, tools of instruction & assessment, and then their implementation for improving the student learning process. Innovation in education would definitely improve the quality and productivity of learning of the students.

Innovations in education are ultimately directed at changing quantitative and qualitative aspects. At qualitative level, it means better knowledge , more skills, better competencies , values , placements and performance. Quantitatively it means improved learning parameters, volume of information learned and retained, amount of skills developed, retention, number of students in class etc.

Educational innovation concerns all stakeholders. They aim at improving the learners' attitudes, behaviors, self assessment, self efficacy and communication, collaboration and engagement. For ensuring this, the standards of teachers education, professional development and life long learning have to be raised. An optimal learning environment has to be ensured for achieving excellence of the learning outcomes for each and every student.

Check Your Progress -1

1) Define creativity and innovation

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2) Elaborate on creativity and innovation in educational institutions.

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5.4 Teachers and Creativity/ Innovation in Education

The teacher's existing overload act as a major barrier to creativity and innovation in education. There is a need of having a support system in forms of policies and tools that help all educational actors to pursue creative and innovative paths. Manifesting of creativity and innovation is challenging as

- It does not always result in tangible outcomes and hence may lack evidential support in many cases.
- They are constantly exposed to subjectivity, arbitrariness and interpretation making it challenging.
- There is a huge gap in policy and practice.

Much needs to be done for the implementation of creativity and innovation in schools. Still the role of teacher is fundamental to bring about new pedagogies or to stimulate change (Ala-Mutka, Bacigalupo et al., 2008).

An enabling environment is must for promotion of creativity and innovation which can be ensured by bringing in following changes:

5.4.1 Assessment: The efficiency of teacher is often judged in terms of their student's assessment results. Assessment for creative learning will help students enhance the quality of their learning. The component of creativity must be including in the formal test and in day to day practice. This will entail adapting the concepts of creativity and innovation and set stage for both teachers and students. Valuing and appreciating creative expression will welcome innovative ideas and initiative among learners.

5.4.2 Promoting culture of creativity & innovation: Culture of risk taking to mistake avoidance needs to be promoted. The main challenge lies in the values that characterize creativity and innovation (risk-taking, exploration beyond the rules, non-conformity), which are in sharp contrast with school values (standardization, obedience, relevance and correctness). Establishing a democratic culture where student ideas, interest and opinions are welcomed. The environment must recognize creativity and allows the students to know when to be original and

when to conform. Open communication at all levels, encourage divergence and understanding the relation relationship between people, ideas, subject domains, cultures.

5.4.3 Curriculum: Curriculum needs to promote and facilitate creative learning and innovative teaching. Innovative curriculum has to create a balance between different areas of knowledge and avoid competing demands. Flexibility and freedom as opposed to prescription may help to address students' interest.

5.4.4 Pedagogical approach: Teachers need to value creativity and motivate the learners to play an active role in production of knowledge and take ownership of their learning. Tailor made pedagogical approach according to the interest and abilities of learners' will lead to development of thinking skills and cultivating the right climate for creative learning and innovative teaching. Learners need to be treated as thinkers and motivated intrinsically to take risks.

5.4.5 Teachers: Teachers play an important role in fostering creativity and innovation in education. They need to be trained to acquire new skills, techniques and method to be innovative & creative and support professional development. They need to have conceptual understanding of creativity and techniques of fostering it. They need to be supported technically and personally to be creative and innovation.

Check Your Progress- 2

1) Discuss the role of teacher in developing creativity and innovation in education.

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2) What are enablers? How can an enabling environment be created for innovation and crestivity?

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5.5 Skill Development of Teachers: New Requirements for Creativity & Innovation

For ensuring development of innovation and creativity, there is a need of having an environment that nourish and nurture the spark inside the individual. There is a need of establishing a macro environment integrating social, cultural and institutional context and a stimulating immediate micro environment. A systemic support system is needed for growing innovations. Educational researches have constantly stressed that teacher quality is the fundamental element of educational success. Teacher education and professional development are definitely one of the primary areas that call for innovative approaches: teachers must be taught to teach well (Marcus, 2012).

Teacher's education includes pedagogical theory, teaching skills and professional skills (Krneta et al (2007)). By teaching skills it means giving practice and training in various approaches, strategies and techniques that would help the teachers to impart and plan instruction, give suitable reinforcement and carry out effective and efficient assessment. It includes effective skills for managing the class, use and preparation of instruction materials skills. The lessons on Pedagogical theory encompasses the sociological, psychological and philosophical aspect that would allow the teachers to possess a strong basis for practicing the skills needed to teach in the classroom. Professional skills encompass the strategies, approaches and techniques that would assist teachers to develop their career and career growth. It encompasses counseling skills, soft skills, computer skills, information retrieving & management skills, interpersonal skills and life-long learning skills. Combination of pedagogical theory, teaching skills and professional skills would serve to develop the right attitude, skills and knowledge in teachers to promote holistic development (Gibbs and Coffey, 2004).

The 21st century professional development skills expected to be present in teachers are

- Adaptability to ever-changing needs and demand of the society
- Confident
- Able communicators
- Team builder
- Imaginative
- Leadership skills

- Mindset i.e. conceptual understanding towards appropriate and meaningful use of technology and innovation.
- Lifelong Learners
- Analytical thinking
- Work collaboratively
- Motivation/drive
- Adaptability
- Quantitative skills
- Decision making
- Risk-taking
- Global mindset
- Entrepreneurship

The collection of skills could be grouped together and described as “innovation skills” since all are vital to developing and launching an innovation. It takes creative problem solving, leadership, strategic thinking, and effective communication. In the present era, skill development is an integral part of any training programme to increase the efficiency and productivity of an individual for holistic development. The present educational system expects the teachers to be innovative and creative.

Check Your Progress- 3

1) Discuss the 21st century skills.

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2) How will the role of teacher change in context to 21st century skills?

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5.5.1 Pre Service and In Service Training Techniques

In service education is defined as the relevant courses and activities in which a serving teacher may participate to upgrade professional knowledge, skills and competence in the teaching profession. Therefore, it encompasses all forms of education and training given to a teacher who is already on the job of teaching and learning. In-service education is also referred to as continuing education that is designed for the retraining, re skilling and updating the knowledge of manpower. The perception and expectations from a teacher have changed. They are expected to contextualize information, cater to different learning styles, and teach students to think rather than recite. They must address challenges that are constant changing. However the professional training programme has failed to address these concerns.

The major question that arises is that how can 21st century skills be integrated into teacher education programme. To start with following changes can be made in the existing teacher training programmes:

- Adaptation of curriculum and pedagogical techniques so that they are to adapt to dynamic teaching experiences in real situations.
- Developing a balance on collaborative tools to enhance and captivate learners and encourage collaboration
- Making teachers go beyond learning so as to facilitate, stimulate, and adapt to changing times.
- Be a role model to their students.
- Be a leader with clear vision and goals.
- Equipping teacher education institute are well equipped with human and material resources.
- Ensure structured and supportive supervised internship programme.

Besides above changes, following pre service and in service teacher training techniques that can be adopted are:

Aligning training program with 21st century knowledge and skills initiatives: Effective educator preparation program should include coherence, interdisciplinary curriculum, extensive connected clinical experience, inquiry approach and performance based assessment. The training

program should provide a high quality general education in core subjects, 21st century learning, innovation and technology skills. The educators need to be challenged to take responsibility for achieving their learning goals. The trainees should be given opportunities to fully explore and understand how to develop and use curriculum for innovation and creativity. Educator preparation programs, then, play an important role not only in modeling effective curriculum and instruction that addresses both content and skills so that their own students will learn well; they offer important, structured opportunities for teacher candidates to learn how to plan curriculum, set learning goals for their students, organize daily practice; and evaluate their own and their students' successes along the way

Develop teaching learning communities: Here teachers can familiarize themselves with new ideas, concepts, procedures and experiments in innovation and creativity. This enable them to adapt and contribute to development of curriculum being implemented. They get an opportunity to reflect upon their professional practice, routine activities and contextual values. They look beyond the boundaries of classroom and learn from each other. Teachers engage in collaborative inquiry and this contributes to improvements to their classroom practice. These communities share and critically integrate their practices in a collaborative, inclusive and pursue the common goal of improving their effectiveness. They donot feel threatened in their own like minded communities and get a platform to share their real life experiences. The collaborative enquiry is an inclusive activity and thus contributes to the generation and maintenance of a learning organization.

Capacity development programmes: There is a need of developing capacity development at pres service training programme and then n subsequently to developing capacity at school level (through pre-service and in-service teacher training) is to identify a group of people in the training institutes who already have those characteristics (expressed as knowledge sets, skills and dispositions) which contribute to successful teacher training. There is a need of having teacher trainers with school based and teacher training experience so as to identify appropriate learning experiences. They should have the ability to tailor made their teaching teaching and learning strategies so that they reflect prior knowledge.

Adopting Blended learning approach: Networks created through online platforms allow teachers to relate to each other beyond the confines of their discipline, level and school context.

The established collaborative network will thereby amplify the possibilities of community building and hence of learning from and communicating with others from a variety of different backgrounds and contexts.

Research based opportunities: Opportunities to conduct research projects enable them to develop analytical skill and innovate on pedagogical techniques. Teachers are expected to develop protocols, organize their own projects, direct research into their practices, and design professional learning for their peers.

Field Experiential methods of training: if we expect teachers to teach 21st century skills to children, they probably need to experience it first themselves. However they are not trained accordingly. As the classrooms are moving towards innovation, so should teacher training. It can be simply encouraging teachers to doodle their ideas and visually present them to their peers, like a class project. But utilizing tactics like small group learning or online assessments for your teachers if you want them to work in classrooms.

Setting the start point: Teacher trainers need to understand and spend some time in the classrooms so as to get to know the right resources for the teachers. By understanding the real problems of the classroom and the methods being used by teachers to solve them. This would give an insight to the trainer to enable develop a training schedule for being innovative and creative.

Examine the role of content, pedagogy and technologies in developing higher order thinking skills: It is challenging for teachers to master the ability to teach for content mastery and be innovative and creative also. Teachers need to develop the skills and knowledge to thoughtfully integrate content, pedagogy and technologies in their teaching. The pre service and in service teacher training programme need to provide leadership and partnership so as to benefit the trainees and all teachers.

Optimal learning environment: The learning environment within a training program is the vital component of any reform. The present technology invasion has moved the classroom outside the four boundaries and allow global connections. The programmes need to support emotional, social and physical well being of teachers so as to prepare them for engagement in their learning environments. The physical spaces need to be adaptable and facilitate collaboration, interaction

and information sharing. Teacher trainees benefit from up to date technology tools and resources that connect with deeper ways of engaging with content and innovating. Educator preparation programs include professional learning communities and peer coaching in their programs, especially in their clinical programs, to ensure the long-term practice of continuous development through collaboration with colleagues.

Developing partnerships: Partnerships are important for transforming the teacher training programme. Target audiences can be community and business leaders, professional associations, local educational organizations, professional development schools, policy makers and parents. This creates a spirit of active collaboration and enables true innovation around teaching and learning.

Check Your Progress- 4

1) What changes do you expect to happen in the teacher training programme to prepare teachers for creativity and innovation?

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5.5.2 Promoting Meaningful Connections and Collaborations

The need of present times is to look beyond innovation. In times of increasing competition, organizations need to exploit new ideas and opportunities. Creative working environments and collaboration tools facilitate the exchange of ideas. Early clustering facilitates creative networking and unleashes the young potential at a faster rate. For innovating, one engages in

exploring new topics, understanding, diagnosing, analyzing, creating, inventing and solving problems. These attributes are all facets of “learning,” and any organization that thrives in a rapidly changing environment has surely encouraged its members to learn and to apply active learning results to keep up with external changes. Involving more people in this process, and doing so very effectively, is one of the best ways to accelerate the pace and improve the quality at the same time.

Alan Mulally, formerly a senior manager of Boeing and then CEO of Ford put it this way when he described the development of the company’s new 777 aircraft: “We can’t make a better airplane unless we can figure how to get everybody’s knowledge included in the design.”

Collaboration is the ability to effectively work with others. This skill involves working together while taking actions, respecting others’ needs and perspectives and contributing to and accepting the final outcomes. Innovation is a collaborative process, and it’s inevitable and necessary for people to work together to create and solve the problems that always arise across a wide range of disciplines and areas of expertise on the road from idea to innovation.

Ideas almost always get better as they are shared, discussed, and reworked, and then combined and recombined with other ideas on the way to becoming innovations. The question arises What has to be done for ensuring collaboration for innovations?

- **Ensuring communication:** working together in collaboration can only yield results if there is better communication. Most of time, we think that we generally understand what we think, the person that we’re expressing it to generally understands it in the same way. However during innovating, interaction can only allow fundamental understanding of what it’s supposed to do, how it’s going to be made. Face to face interaction is important for innovation as it enable capturing of non verbal cues. Face to face interactions also enable people to share experiences, through which they connect as they share tacit and explicit knowledge, and in the process create new knowledge.
- **Efficient mentoring and leadership:** a mentor or facilitators act as a guide through the creative process using deep understanding of the creative process and help the members to anticipate the participation of members through out the process. An understanding of the group psychology enables contextualization of problems for easy solutions.

- **Using social tools:** It is a very common practice of discussing problems over coffee table or during lunch breaks. People often brought problems, asking for help where they were stuck, and sometimes their naturally-curious colleagues would help by brainstorming possible solutions to design and engineering problems right then and there. Instead of keeping conference rooms for discussion, one can create social hubs. conference rooms are proven creativity killers, deadly dull, inflexible, and made really just to support information exchange in a hierarchical setting.
- **Establishment of innovation ecosystem:** NEP 2020 provides for a research ecosystem under the stewardship of the National Research Fund (NRF). It aims at providing the required impetus to grow the R&D agenda by way of building a research ecosystem comprising the government, universities, research institutes and industry. The collaboration between academia and industry envisioned by the NEP calls for a patent policy structure at the university level to facilitate more patent applications. **Innovation ecosystem** is the term used to describe the large number and diverse nature of participants and resources that are necessary for innovation. Successful innovation ecosystems are characterized by an active knowledge economy. Here collaborations occur in a variety of ways including events, cross-promotion, and sharing of resources. Working together in this capacity demonstrates the power of collaboration and creates a community that supports each other's goals, missions, visions, and values.
- **Identification of skills and talents of team members:** Collaboration works best when team members have complementary skill sets required to complete the task. To create innovation that our education system actually want, consider collaborating with school leaders, as well as with experts within your organization, including technology, pedagogy, & communication. This will help you access collective intelligence and make informed decisions.
- **Develop healthy relationships:** Appreciation, engagement and conflict resolution are the essential ingredients for collaboration. Different ways needs to be identified wherein the member are able to establish rapport with each other and get to know each other personally. This will lead to building of trust and provide interaction for informal social interaction.

Examples of collaborative innovations

- **General Electric Ecomagination Challenge**.: Ecomagination is a \$200 million innovation experiment focused on enhancing the productivity of resources, and reducing the environmental impact of resource use. The way they create these solutions? Through an idea share between businesses, entrepreneurs, innovators, and students.
- After nearing bankruptcy **LEGO** used innovation-encouraging techniques to turn the situation around. LEGO created LEGO ambassadors, a group of select fans who act as vessels for communication between LEGO and the wider community. Not only does this allow LEGO inside insight into their fan base, it also created added value for the fans, and acts as a reward system for the most loyal fans. When LEGO introduced LEGO mindstorms, hackers began using the new release to hack the system, and customise it. Once LEGO realised they couldn't fight this community of intelligent hackers, they instead began harnessing the creativity of the hackers to improve their product instead. Through collaboration LEGO managed to avoid a war with intelligent hackers, and got genius improvements on their products in exchange.

Source : <https://blog.vizibl.co/3-groundbreaking-examples-of-collaborative-innovation>

5.6 Summary

Now that we have come to the end of the unit, let us recapitulate all the major points that we have covered.

- Development of educational organization depends on innovation and creativity. Both are important to further understand the human potential and traits and promoting individual well being in both personal and professional achievements.
- Creativity is understood as a multidimensional construct involving cognitive, personality and educational aspects. These dimensions interact with each other with each other individual thinking and creative styles.
- Creative people would function on behalf of their intrinsic motivation, considering this as a key component to influence an individual's ability to express his/her talents.
- Innovation has been valued as a necessary individual characteristic in the globalized world. Innovation has been defined as the development of the product or practice of new and useful ideas to benefit individuals, teams, organizations or a broader range of society.
- Creativity has been identified as the most important determinant of innovation. Creativity and innovation require a complete rupture of conventional thinking, similar to a radical paradigm shift, beginning with a divergence of viewpoints and attempting to achieve convergence.

- Creativity and innovation in education is the necessity to meet the emerging challenges of present times. There is a need of shifting from rote memory to conceptual understanding so that analytical and creative skills are nurtured in the children.
- Teachers play the vital role in developing a creative and innovative approach in the teaching learning process. They are the change bearers and have the responsibility of adopting pedagogical approach that facilitates the creation of an innovative ecosystem.
- Due to the changing roles of teacher, stress needs to be laid on the skill development of teachers so as to make them competent to bring the change.
- Pre service training and In service training programmes need to be redesigned to include strategies that promote creativity and innovation. More opportunities for collaboration, discussions, skill education and doing needs to be included so that problem solving and innovative thinking can be developed. Developing a 21st century teacher requires the development of the spirit of creativity and enquiry, and intellectual and professional competencies among in-service and pre-service teachers.
- Collaboration are needed for establishing an innovative environment. Teams members have to be motivated to support each other in the process.

5.7 Questions for Practice

- 1 What do you mean by creativity and innovation? Bring out the relationship between the two?
2. What skills need to be nurtured to bring and promote innovation?
3. Design a skill development programme fostering creativity and innovation
- 4: How can meaningful connections be promoted in organization for innovation?

5.8 References and Suggested Readings

- Alencar, E. M. L. S., & Fleith, D. M. (2008). Barreiras à promoção da criatividade no ensino fundamental. *Psicologia: Teoria e Pesquisa*, 24(1), 59-66
- Almeida, L. S., & Wechsler, S. M. (2015). Excelência profissional: a convergência necessária de variáveis psicológicas. *Estudos de Psicologia (Campinas)*, 32(4), 763-771. <http://dx.doi.org/10.1590/0103-166X2015000400019>.

- Bledow, R., Frese, M., Anderson, N., Erez, M., & Farr, J. (2009). A dialectic perspective on innovation: Conflicting demands, multiple pathways, and ambidexterity. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 2(3), 305–337. <https://doi.org/10.1111/j.1754-9434.2009.01154.x>
- Bledow, R., Frese, M., Anderson, N., Erez, M., & Farr, J. (2009). A dialectic perspective on innovation: Conflicting demands, multiple pathways, and ambidexterity. *Industrial and Organizational Psychology*, 2(3), 305-337. <http://dx.doi.org/10.1111/j.1754-9434.2009.01154.x>
- Cornali,F.(2012). Effectiveness and Efficiency of Educational Measures: Evaluation Practices, Indicators and Rhetoric. *Sociology Mind* 2012. Vol.2, No.3, 255-260. Published Online July 2012 in SciRes ((<http://www.SciRP.org/journal/sm>) <http://dx.doi.org/10.4236/sm.2012.23034>).
- Gibbs, G., & Coffey, M. (2004). The impact of training of university teachers on their teaching skills, their Skill Development For Teachers In Educational Institutions - A Review 174 SKILL DEVELOPMENT: THE KEY TO ECONOMIC PROSPERITY approach to teaching and learning of their students. *Active Learning in Higher Education*, 5(1), 87-100
- Krneta, R., Bjekić, D., Milošević, D. (2007). Competencies of e-Teaching in the System of Teachers' Competence, ETAI 2007, September, Ohrid- Macedonia, Book of Abstract, 29, CD Proceeding, Available on http://www1.etf.ukim.edu.mk/SCM_C021A06/conference/E3-2.pdf
- Marcus, J. (2012), “Old school: four-hundred years of resistance to change”, in Wildavsky, B., Kelly, A. and Carey, K. (Eds), *Reinventing Higher Education: The Promise of Innovation*, Harvard Education Press, Cambridge, MA, pp. 41-72.
- Milbrandt, M., & Milbrandt, L. (2011). Creativity: What are we talking about *Art Education*, 64, 8-13.
- Plucker, J., & Renzulli, J. S. (1999). Psychometric approaches to the study of human creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp.35-60). New York: Cambridge University Press.
- Runco, M. A. (2007). *Creativity: Theories and themes: Research, development, and practice*. New York, NY: Academic Press

- Runco, M. A. (2011). Divergent thinking. In M. A. Runco, & S. R. Pritzker (Eds.), *Encyclopedia of creativity* (pp.400-403). London: Elsevier Academic Press.
- Simplicio, J. S. C. (2000). Teaching classroom educators how to be more effective and creative teachers. *Education*, 120(4), 675-680
- Torrance, E. P., & Safter, H. T. (1999). *Making the Creative Leap beyond*. Buffalo, NY Creative Education Foundation Press.
- Zeng, L., Proctor, R. W., & Salvendy, G. (2011). Can traditional divergent thinking tests be trusted in measuring and predicting real-world creativity? *Creativity Research Journal*, 23(1), 24–37. <https://doi.org/10.1080/10400419.2011.545713>
- Online sources

<https://innovationmanagement.se/2015/06/02/four-tools-to-support-creativity-and-innovation>

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS (CISE-3)

UNIT 6: LEARNING ABOUT CREATIVE EDUCATION

STRUCTURE:

- 6.1 Learning outcomes**
- 6.2 Introduction**
- 6.3 Creative Education**
 - 6.3.1 Need of creative education**
 - 6.3.2 Model of creative education**
 - 6.3.3 Facilitating creative education in schools**
 - 6.3.3.1 What needs to be done?**
- 6.4 Students learning in creative context**
 - 6.4.1 Principles of learning in context of creativity**
 - 6.4.2 Attributes of creative environment**
 - 6.4.3 Advantages of students learning in context of creativity**
 - 6.4.4 Role of teacher in creating a creative environment**
- 6.5 Inclusive and Intercultural approaches to education**
 - 6.5.1 Vision of intercultural approach**
 - 6.5.2 Becoming an Inter culturally Inclusive Educator**
- 6.6 Summary**
- 6.7 Questions for Practice**
- 6.8 References and Suggested Readings**

6.1 Learning Outcomes

After studying this unit, you will be able to:

- Explain the meaning of creative education.

- Give the meaning and attributes of creative education.
- Elaborate on the process of student learning in creative contexts
- Discuss inclusive and intercultural approach to education.

6.2 Introduction

Globally, education is facing challenges in all spheres whether technological, economic, social or personal. To meet these challenges education has to be flexible and adaptable. There are research evidences which suggest that there has to be a greater degree of promotion of creativity in learning. Emphasize has to be laid on development of individual potentialities, such as original thinking and reasoning, creativity, innovative and entrepreneurial capabilities. A good education system should give freedom to recognize their capabilities and individual potentials. There is a need of creating optimal learning environment where thinking, questioning and imagining is encouraged. There is a need to foster collaboration, ask question and act creatively.

6.3 Creative Education

An education type where students are able to use their imagination and critical thinking to create new and meaningful forms of ideas. A learning situation where they can take risks and be independent and flexible. Instead of stressing on mugging or memorization of facts they are taught to understand concept and apply them to solve problems of life. Creative education means incorporation of creativity into the curriculum policy and experimental learning projects with an expectation that this will reinforce the educational reforms and revamp the educational environment. Creativity comprises of a variety of cognitive, affective and interpersonal aspect and is intended to optimize children functioning in the social academic and artistic domains. Over the times educators have stressed rethinking of the learning curriculum so as to emphasize critical thinking skills and creative thinking skills.

It is very important to distinguish creativity education from creative education. Creativity education focuses on promoting creative thinking in the educational discourse. It is parallel to the idea of including creativity in education. However creative education is the term used from pedagogical perspective which uses creativity as a mean and not an end. By creative education it is understood as the improvement of creative means and perspective in support of energizing the existing educational structure. It is defined in terms of using creative ways of thinking in

teaching and learning. It pertains to implementation of different approaches to encourage the students to think differently and learn efficiently.

Creativity has become the core agent of educational reforms world over expanding from policy level to everyday life as a response to the emerging challenges of the society. The rapidly changing technological and social milieu of the society has imposed serious concerns over the existing education system. Since times educationist have stressed the need of rethinking and revisualizing our existing education system. When we talk of creativity, four aspects of creativity have been stressed over and over again. These are originality, imagination, purpose and value. For implementation of creativity in the classroom, creative teaching, teaching creativity and teaching for creativity have been stressed. As far as the curriculum is concerned it needs to stress on five key thinking skills that relate to information processing, reasoning, enquiry, creative thinking and evaluation skills. Schools and educational institutions need to provide a stimulating environment in which creativity is valued and students get sufficient time to explore the content and plan a wide variety of activities that involve multisensory approach. There is a need to give ample opportunities to children to express their ideas through multiple representations. Community resources can be utilized to provide exposure to students to get hands on training on real life situation.

Hence development of creativity and innovation has been recognized as key survival skills in the present era of knowledge economy. Creative education is seen as a strategy to equip students with creativity and innovation and as an encouragement for the teachers to energize students learning through actualization of creativity and enhancing students creative learning by developing teachers creative teaching strategies and reconstructing the curriculum that supports the development of Creative Thinking (Cheng, Wang, Liu, & Chen, 2010).

Tamdogon (2006) has proposed that creativity in education starts with curiosity. He further proposes a 5C model for creative education consisting of connectivity, content, community, communication and commerce.

- **Connectivity:** According to him curiosity marks the start of learning as it triggers questions that relates to a particular subject.

- **Community:** The teacher supports the learner in its attempt to immerse in the relevant knowledge or content. The learner then tries to see similarities between the content and their previous learning.
- **Communication:** The learner proposes alternative answers to the problems that have been proposed and becomes involved in the interaction and exchange of ideas with others so as to validate their opinion (communication).
- **Commerce:** Finally the learner obtains knowledge by examining his perceptions seeking useful information and assimilating the information linkages thus creating a personal values via the experience of intellectual transformation

Check Your Progress-1

1. Define creative education.
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2. What is 5 C model to creative education?
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3. How will you differentiate between education for creativity and creative education
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6.3.1 Model of Creative Education

Tsai (2015) proposed a model of Creative education consisting of three-dimensions: **initiation operation and content**. The spiral model begins with curiosity stage and then teacher focusing on Creative Thinking with the content of problem solving. As and when the teacher delivers the content of information they can use various creative teaching methods and make the students understand the content of information via creative learning. Hence the teachers may focus on problem identification and problem solving tasks to develop conceptual understanding of the learning material. For ensuring that the model of creative education is implemented in true sense the teachers need to inspire learners’ interest in the subject being taught. But this may not be an easy task. The teacher needs to maintain his positive attitude towards students’ process of learning by cultivating a threat free environment. Once the stage is set, in the operation stage

creativity begins to function not only as a means but also the end of learning. The model emphasizes that three key skills need to be taught to the learners across all disciplines

Initiation

It is a very common observation that in a classroom, students are not motivated to learn new subjects. The teacher thus needs to embrace three behavior skills i.e. curiosity, openness to experience, and tolerance of ambiguity among the learners and achieve new understanding interpretation, reflections and insight.

- **Curiosity:** Curiosity and desire to understand are the critical components of learning process. When any person is able to sustain curiosity, interest and passion; it often leads to creativity and innovation. Curiosity leads to exploration, play and creativity and act as a catalyst to increase one awareness and consciousness towards innovations. Hence there is a need to provide a facilitative environment to the learners that support development of curiosity and thus give them a better chance to optimize their creative performance. Teachers here play a vital role in cultivating the conditions which are favorable to make his students think differently
- **Openness:** Curiosity alone cannot take this task any longer. The most important characteristics of a self motivated learning experience is openness. There is no denying fact that most of the creative people are found to have openness and flexibility as their personality trait. Open to experiences give the learner key stage to assimilate the useful information and knowledge which can be used at a later stage of generating ideas and applying them.
- **Tolerance of ambiguity:** Lubart and Sternberg (1995) in their study reported that though tolerance of ambiguity and risk-taking attitudes vary across different cultures, yet they have been found to profoundly influence the characteristics of creative production.
- **Operations:** The dimension of operation includes three key ingredients that reflect a different perspective on creativity manifested in education. These key ingredients evolve via the processes of knowledge acquisition, knowledge creation and knowledge evaluation.

- **Creative thinking:** Runco and Chand (1995) define creative thinking as that which “leads to original and adaptive ideas, solutions, or insights.” For the training or pedagogical approach for the development of Creative Thinking should be based on the conception of cognitive activities and related to heuristic and cognitive skills. The training should be implemented in world cases and context of appropriate exercises. Torrance (1972) believed that creative thinking should “involve both cognitive and emotional functioning, provide adequate structure and motivation, and give opportunities for involvement, practice, and interaction between teachers and students.”
- **Creative teaching:** there are two different perspective of understanding concept of creative teaching- teaching creatively wherein teachers employ imaginative approaches to make learning more interesting, exciting and effective and teaching for creativity which aims to develop learners creative thinking. Creative teaching has been defined as “a unique, customized, and meaningful exchange of knowledge among all individuals in a learning context” (Rinkevich, 2011). This approach involves use of multiple teaching support materials, class management strategies, student centered learning, connecting classroom teaching to real life situations, and using questioning in the teaching learning process.
- **Creative learning:** It is an interactive learner centered approach which encourages the learner to explore possible learning approaches. It uncovers learner potential with playfulness. The students are exposed to challenging situations, posed demanding questions and given focused direct instructions. This makes the learner make connections, generate exploring options, and evaluating their results. It would appear that, in order to maximize creative learning, students first should learn the four fundamental thinking strategies: analytical thinking, reasoning skills, creative thinking, and critical thinking.

Content:

- **Problem finding:** Identification of the problems involves different cognitive processes as opposite to problem finding. It involves detection of the need for a new program based on a choice between existing and expected programs.

Convergent and divergent thinking, problem construction, category search and combination are essential for generating new ideas.

- **Problem solving:** Gestalt psychologist emphasized that insight is an important aspect of problem solving whereby people go beyond their experience and overcome misleading facts by restructuring of the problem. There are four steps in problem solving: preparation, incubation, illumination and verification. Most theoretical frameworks suggest that the creative process has two distinct components: generative and explorative. In the generative phase mental representations are constructed via memory retrieval, association, and analogy. Then in the process of interpretation and evaluation the exploration is done. Hence it seems clear that idea generation and problem solving are the most important aspects of the agenda for creativity.
- **Reflection:** Basadur, Graen, and Green (1982) noted that “creativity processes which take into account evaluation and go beyond solution finding to problem finding and implementation considerations are termed complete processes” In order to secure a higher quality of creative outputs, serious reflection upon and assessment of each idea is necessary. Evaluation and reflection should occur during each stage on the path toward the eventual production of creative products, enabling a full-cycle creative process.

Check Your Progress-2

1. List three dimensions of creative education.

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2. What is the significance of reflection in problem solving?

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3. Elaborate the key ingredients of ‘operations.’

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6.3.3 Facilitating Creative Education In Schools

Education should give learners freedom to recognize their capabilities and individual potentials. There is a need to create new classroom atmosphere where thinking, questioning and imagination is encouraged. Collaborative learning, questioning and creative action needs to be encouraged. A solid academic foundation in order to enhance their intelligence, including “soft skills” such as understanding, empathy and communication skills has to be laid.

Creative environment should help learners to work on building their knowledge by defining things which are especially important to them. Schools must rapidly transform from the traditional model of learning, where the curriculum is textbook-driven and facts are memorized, to a new, transformed education strategy based on freedom of learning and teaching. The knowledge is provided through research and active mode of learning connected to previous knowledge, interests and talents.

Learning environment in the classroom should foster

- Openness in respecting unusual questions and ideas.
- Connect evaluation to causes and consequences of the idea rather than to quality of the idea; recognize and reward each child’s creativity.
- Expose students to the unexpected and deepen expectations.
- Encourage questions, different responses, humor, and risk-taking.
- Be a role model by personally engaging in creative behaviors.
- Encourage students to ask questions about their unstated assumptions.
- Encourage sensible risks; allow mistakes; use failure as a positive.
- Motivate students to master factual knowledge; it’s an important basis for creativity.
- Take an inclusive approach where students and teachers collaborate to identify problems and issues, and debate and discuss together.

Creativity requires specific classroom designs and teacher behaviors; the teacher’s role is a facilitator and fellow collaborator, joining the students in a process of knowledge building (Sawyer, 2004; Scardamalia & Bereiter, 2006).

It is very sad that the schools are designed in such a way that they oppose creative learning process and act as a barrier

- Knowledge is based on facts and procedures for their solution.
- Emphasis is laid on rote memorization of facts. Students are assessed on their ability to reproduce already established facts and procedure leaving no scope for innovation.
- Role of teacher is limited to transfer of knowledge. It is assumed that teacher is the expert in the field and their job is to transmit knowledge to students.
- What gets transacted in the classroom is decided by the text books or by asking expert adults such as mathematicians, scientists, and historians—not by studying how children actually learn.

6.3.3.1 What needs to be done?

Traditional vision of school is transmission and acquisition of schooling. Effective learning occurs in learning environments that share the following characteristics:

- An emphasis on deeper conceptual understanding.
- Emphasis on building learner's prior knowledge.
- Emphasis on reflection

The same can be ensured by making following changes:

1. New teaching-learning method

Students need to be encouraged to ask innumerable whys and why nots. Curiosity is the seed of creativity. By encouraging curiosity and hence creativity, we can train our students to become independent, thinking individuals who discover and solve problems on their own, thus nurturing their confidence and self-belief.

2. ICT-empowered pedagogies

In this information age the teachers need to be empowered with the new ICT-empowered pedagogies such as blended learning and flipped classroom which can help meet the learning needs of the 21st Century. The main goal of the flipped classroom is to enhance student learning and achievement by reversing the traditional model of a classroom by focusing class time on

student's understanding through interaction rather than on passive lecture component. This can help the students acquire higher-order learning skills including creativity.

3. Experiential learning and exploration

There is an urgent need to shift focus from passive learning to experiential learning i.e learning by doing. By engaging students in hands-on practical experiments and reflection, they are better able to connect theories and knowledge learned in the classroom to real-world situations. This approach is extremely effective in helping the students to grasp, explain and retain otherwise difficult concepts. Fortunately, India has started recognising the importance of hands-on, experiential learning as a powerful method to encourage thinking and creative expression. Experiential learning is one of the best ways to teach students creative problem-solving.

4. Focus on keen observation

Keen observation of the world around has caused many important breakthroughs in science and medicine and in the social and business worlds. Strong observation skills are found to be greatly linked to greater creativity, originality and flexible thinking. Students must be taught and encouraged to observe deeply, to look beyond the obvious and come out with new ideas.

5. Avoid excessive use of the internet

One of the main reasons behind the lack of creativity in our students is the excessive usage of the Internet. This has impacted adversely the generation of original ideas and plans. Students do not bother to use their imagination while preparing a project or report or dissertation and what is worse is that the institutions also do not object.

6. Reforms in Assessment Pattern

Assessment drives learning. Special training needs to be given to the teachers through workshops in setting examination questions which test out of box thinking and hence creativity. Assessment process needs to be made more scientific to encourage multiple skills of the students. The way we assess our students, the students will learn in that way. That is the best way to slowly draw our students away from rote learning towards innovation and creativity.

7. Lighter syllabi

There is a need to have lighter syllabi in each discipline consisting of only core essentials and the focus of teaching should be on conceptual clarity. All of this will give the students ample time for creative thinking.

8. Teaching beyond curriculum

At least one lecture per week should be devoted to “teaching beyond curriculum”. In this lecture, students may be asked to decide what they will like to do in one year or in one semester. This project may involve anything like writing poetry, news report, general articles, scientific fantasies etc.

9. Skills for creativity

Traditionally educational policies have focused on increasing participation in science, technology, engineering, and mathematics (STEM) disciplines. However it is well recognized now that innovation or creativity requires broad range of skills like coming up with new ideas and solutions, willingness to question, ability to present new ideas or products. Hence if creative education in schools need to focus on these three categories of skills

- Subject-based skills, which represent knowledge and knowhow in a particular field.
- Thinking and creativity, including both higher-order skills and creative cognitive habits. These competencies include critical faculties, imagination and curiosity.
- Behavioural and social skills, including skills such as self-confidence, leadership and management, collaboration and persuasion.

School curriculum plays an central role in developing skills from early age as it influences what and how children learn. In India, for example, the rote learning system (using repetition as a technique for memorisation) still prevails in many Indian schools, impeding the development of curricula focused on skills for innovation. However there are some positive examples of the Apeejay school network, promoting educational programmes for creativity and innovation, with practices such as enquiry-based projects designed to develop creativity and original thinking.

10. Entrepreneurship education

A tool to develop entrepreneurial skills and encourage a more favorable culture and attitude towards innovation and the creation of new firms. It involves trying to foster entrepreneurial skills through problem-solving activities and contextual learning based on interactive projects and games. Entrepreneurship support in higher education generally has two strands. The first strand aims at developing entrepreneurial mindsets. It stresses the development of such traits as self efficacy, creativity, risk awareness, building and managing relationships. The second strand aims to build the attitudes, skills and knowledge needed to successfully launch and grow a new business

11. Translate research into action

We need to base our education on well established research and theory. Outcomes, research, student and learning environment have to be interlinked. The desired learning outcomes shape student learning, work, instructional plans or classroom experiences. Important concepts to take care of include how creative work is evaluated, how creativity can be included in rubrics or larger assessments, how peer-to-peer interaction can improve results, and how teachers are the most qualified people to rate student creativity. Teachers need to nurture creative process of students.

12. Redesigning learning environment

Flexible use of inside and outside spaces, materials and time can promote student creativity. Flexibility provides time for immersion in school and extracurricular activities and providing open spacious indoor and outdoor areas that can be used freely and imaginatively by students. This also include making available and incorporating of wide range of resources, materials and tools in the learning environment. Novel, exciting and realistic task should be used to foster student's creativity. Students need to be given opportunity to strike a balance between structure and freedom so that they feel supported and encouraged to take risks necessary for creative expression. Creative supportive environment should incorporate open dialogue and collaborative activities. Outside organizations should be involved in partnerships to foster creativity. This includes visiting learning spaces like museums and art galleries and brings in experts to the

classroom from various organizations, business and agencies. This increase student engagement, motivation and creativity.

13. Using technology Based Pedagogy

Following tools can be used to foster creativity in a class

- **Digital Storytelling:** Storybird: Storybird gathers images and invites students to turn those images into original stories. Google docs are a simple tool that can allow your students to put their ideas to paper in an easy to share format. Story builder, My Simple Show and Powtoon are of help.
- **Developing and Building Prototypes:** Google drawing or Tinkercad are great resources for designing digital prototypes
- **App smashing:** App smashing occurs when learners use the functionality from more than one tool to build something with greater functionality. App smashing requires more planning, experimentation and it can foster creativity.

14. Changing mindset of learners

As a teacher develop passion for teaching as that would create excitement in the classroom. Teachers need to be innovative to design and deliver content. There is a need to develop learners as leaders instead of stressing on rote memory and assessment on standardized tests. Teachers need to set the stage for enabling the performance of students.

Check Your Progress-3

1. Describe the use of technology in facilitating creative education in school.

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2. What are the skills that need to be focused in schools for developing creativity?

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6.4 Students Learning In Creative Context

21st century learning focus on creativity, critical thinking, communication and collaboration. Creative learning requires students to create their own knowledge i.e. constructivist process;

collaboration between teacher and students, engagement in improvisations. Such an attitude allows for creative benefits guided with teacher practices and learning outcomes.

6.4.1 Principles of learning in context of creativity

- **Learners centered:** All the activities designed for creative expression development must centre on the learner. This allows the learners to construct their learning through engagement and active exploration. Hence a mixed approach of pedagogies have to be employed so as to generate self regulated learners who are able to develop meta cognitive skills, regulate their emotions and set higher & personal goals.
- **Social context of learning:** Learning environment should be founded in social nature of learning to encourage collaboration and cooperation.
- **Emotional integration:** Developing positive beliefs in learner develop deep understanding and adaptive competence.
- **Respecting individuality:** Prior knowledge, ability, conceptions of learning, learning styles and strategies, interest, motivation, socio emotional differences of learner needs to be considered while designing learning environment.
- **Self directed lifelong learning:** students should be developed into self directed life long learners. This will help in developing adaptive expertise. Lifelong learning and adaptive expertise are critical in present challenging world.

6.4.2 Attributes of creative environment

A creative framework to teaching and learning turns education into a journey of personal and collaborative discovery. The attribute of creative environment are

- Commitment to open ended work, goal oriented and explorative.
- Based on maxim known to unknown.
- There are low consequences for failure. Identification of problem and looking for its solution are promoted.
- The nature and pursuit of content drives time instead of time driving content.
- An understanding of different types of knowledge and ways of thinking and working, and the ability to mix and match these ways to the task at hand.
- Creativity has a higher value than technique, technology, or ideology.

- There is an absolute avoidance of the bureaucratic mindset.
- There is an ability to evaluate moment to moment as the effort proceeds, and to make adjustments based on constant evaluation.
- Willingness to wait, an understanding that results often appear spontaneously after many failures, and thus that planning.

6.4.3 Advantages of student learning in the context of creativity

There is a need to ensure that student's learning occurs in a creative environment due to the following benefits:

- i. Provides opportunity to internalize their learning.
- ii. Develops critical thinking.
- iii. Develops 'think' out of box approach.
- iv. Supports STEM thinking.
- v. Develops connection between classroom and real life experiences.
- vi. Develops deep learning approach
- vii. Provides opportunity for unique, thoughtful, and powerful communication
- viii. Support growth mindset that comes up with hidden, original, and unique possibilities.
- ix. Allows collaboration.
- x. Balance between the logical and sequential thought processes

6.4.4. Role of teacher in creating a creative environment

Robert J. Sternberg describes a number of ideas to create an environment to help foster creativity:

- Enact cross-fertilization in the classroom is to ask children to identify their best and worst academic areas and prepare projects on the same.
- Teachers also need to allow students the time to think creatively. Most creative insights do not happen in a rush.
- Teachers also should instruct and assess for creativity. If teachers want to encourage creativity, they need to include at least some opportunities for creative thought in

assignments and tests. Questions that require factual recall, analytic thinking, and creative thinking should be asked.

- Teachers should let students know that creativity does not depend on the teacher's agreement with what children write, but rather with ideas they express that represent a synthesis between existing ideas and their own thoughts.
- Encourage creative collaboration. Teachers can encourage children to learn by example by collaborating with creative people. Students also need to learn how to imagine things from other viewpoints. Individuals can broaden their perspective by learning to see the world from different points of view.
- Teachers and parents should encourage their children to see the importance of understanding, respecting, and responding to other people's points of view.

As instructors, we are obliged to practice what we preach, so teachers must understand and be able to do these kinds of things themselves.

Check Your Progress-4

1. What are the principle of creative learning?

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2. What are the advantages of making students learn in a creative environment?

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3. As a teacher, how can you change your classroom into a creative learning environment?

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6.5 Inclusive and Intercultural Approaches to Education

Diversity is part of our everyday educational reality. This diversity is well recognized by intercultural approach. The approach starts with the premise that this diversity brings depth of opportunities and richness to the educational experience. It reflects a positive, rather than deficit, view of cultural diversity as well as, importantly, an opportunity for self-awareness through understanding. Gao (2009) proposes that it focuses on the dynamic interactions between the individual and the socio-cultural environment. Deardoff (2016) refers to intercultural

competence as the ability to develop targeted knowledge, skills and attitudes that lead to a visible behaviour and communication that is both effective and appropriate in intercultural interactions. UNESCO (2013) states that intercultural competences aim at freeing people from their own logic and cultural idioms in order to engage with others and listen to their ideas, which may involve belonging to one or more cultural systems.

Intercultural approach to education has two core points:

- Respecting, celebrating and recognizing the diversity in all areas of human life. It sensitizes the learner to the idea that humans have naturally developed a range of different ways of life, customs and worldviews, and that this breadth of human life enriches all of us.
- It promotes equality and human rights, challenges unfair discrimination, and promotes the values upon which equality is built.

6.5.1 Vision of intercultural approach

The main purpose of intercultural approach to education is to:

- Making the child understand the world through the acquisition of knowledge, concepts, skills and attitudes and the ability to think critically.
- Develop spiritual, moral and religious values.
- Develop a respect for cultural difference, an appreciation of civic responsibility.
- Develop skills and understanding in order to study their world.
- Develop personally and socially and to relate to others with understanding and respect.

Intercultural approach to education encourages the child's curiosity about cultural and social differences. It helps to develop a child's critical thinking by enabling the child to gain perspectives on, and to question, his/her own cultural practices.

6.5.2 Becoming an Inter culturally Inclusive Educator

As an educator one can adopt an intercultural inclusive approach by

- **Developing a sense of culture:** Self reflection needs to be done to understand the influence of culture on the practice of education and on value of education. An

inclusive classroom allows the time, space and opportunity for students to also come to identify and understand the many elements necessary to take up their own place as a discipline representative.

- **Reflection on ones teaching approaches and philosophy:** Teachers approach and philosophy of teaching is shaped by one's own experiences and understanding of one's role. As a teacher one needs to distance oneself so as to get a different perspective. This allows one to reflect on how principles of diversity define the learning and teaching experience in our classroom.
- **Understanding culturally framed concepts and ideas:** Students can be made to critical thinking around the culturally influenced concepts. This helps them to develop varied perspectives on their own cultural identities and experiences.
- **Engage in open, appropriate and effective interactions across cultures:** It helps to understand the cultural norms, interactive styles and degrees of formality of intercultural contexts, and they can flexibly adapt their behavior and communication to suit. Open interactions mean relationships in which all participants demonstrate sensitivity towards, curiosity about and willingness to engage with others and their perspectives.
- **Valuing human dignity and diversity:** Values serve as standards and criteria that people use both consciously and unconsciously in their judgments. They have a normative prescriptive quality about what ought to be done or thought in different situations. Values therefore motivate certain behaviors and attitudes.
- **Format of the scenarios:** The scenarios used in the test should reflect the variety of contexts and roles in which students can learn about global issues or explore the complexity of intercultural interactions. Assign a particular role to the student, providing a clear purpose to engage in the task:
 - a. students as researchers
 - b. students as reporters
 - c. students as mediators or team-members
 - d. students as debaters

- **Encourage perspective taking in classroom:** Encourage students to approach same issues from a variety of perspectives by asking question and expressing diversity of opinion in class and modeling openness towards different ways of knowing.
- **Adopting a community approach:** Build communities where everyone feels welcome, help each other, collaborate & respect each other. A partnership exists between staff and parents involving all local communities in the school. Encourage community- school partnerships.
- **Recognize that students may express themselves nonverbally.** Avoid interpreting silence as apathy or lack of ability or interest. Many people like to have time to think before they talk, while others think by talking. Use nonverbal responses yourself to show that you understand and relate to this form of communication. Allow more time for students who are less confident speakers to form and articulate their thoughts. Provide opportunities for these students to express themselves more clearly. Know that misunderstandings can arise, and students may sense a challenge to their ingrained notions of fairness, equality and justice when none was intended.

The ‘intercultural’ teacher must be the one who will guide the learners on the way to discovering connections between culturally-diverse entities, developing the need to know and find out more about other people, realizing their own cultural identity and accepting who they are.

Check Your Progress-5

1. What do you mean by intercultural approach to education?
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2. How can a teacher change to a intercultural inclusive educator?
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6.6 Summary

- Creative education is an education system encouraging students to use their imagination and critical thinking to create new and meaningful forms of idea. Creativity encompasses

cognitive, affective and interpersonal aspects. There is a need of rethinking our existing curriculum so as to allow development of critical and creative thinking skills.

- Creative education is the term used from pedagogical perspective which uses creativity as a means and not an end. By creative education it is understood as the improvement of creative means and perspective in support of energizing the existing educational structure.
- Tamdogon (2006) has proposed that creativity in education starts with curiosity. He further proposes a 5C model for creative education consisting of connectivity, content, community, communication and commerce.
- Tsai (2015) proposed a model of creative education consisting of three-dimensions: initiation operation and content.
- Effective learning occurs in learning environments that share the following characteristics: An emphasis on deeper conceptual understanding, emphasis on building learner's prior knowledge and emphasis on reflection
- 21st century learning focus on creativity, critical thinking, communication and collaboration. Creative learning requires students to create their own knowledge i.e. constructivist process; collaboration between teacher and students, engagement in improvisations.
- Intercultural inclusive approach starts with the premise that this diversity brings depth of opportunities and richness to the educational experience. It reflects a positive, rather than deficit, view of cultural diversity as well as, importantly, an opportunity for self-awareness through understanding.

6.7 Questions for Practice

1. What do you mean by creative education? Explain the model of creative education
- 2: As a teacher how can you facilitate students learning in a creative environment? Discuss by taking examples.
- 3: Describe the inclusive intercultural approach to education? How can a teacher transform to an intercultural educator.

4. Explain the strategies of facilitating creative education in schools.

6.8 References and Suggested Readings

- Basadur, M., Graen, G. B., & Green, S. G. (1982). Training in creative problem solving: Effects on ideation and problem finding and solving in an industrial research organization. *Organizational Behavior and Human Performance*, 30(1), 41-70.
- Cheng, Y.-Y., Wang, W.-C., Liu, K.-S., & Chen, Y.-L. (2010). Effects of association instruction on fourth graders' poetic creativity in Taiwan. *Creativity Research Journal*, 22(2), 228- 235.
- Dearthoff, D. K. (2006). The Identification and Assessment of Intercultural Competence as a Student Outcome of Internationalization at Institutions of Higher Education in the United States, *Journal of Studies in International Education* 10:241-26.
- Gao, Y.H. (2009). Language and identity: state of the art and a debate of legitimacy. In *China and English – Globalisation and the Dilemmas of Identity*, ed. J. Lo Bianco, J. Orton and Y.H. Gao, 101–19. Bristol, UK: Multilingual Matters.
- Lubart, T. I., & Sternberg, R. J. (1995). An investment approach to creativity: Theory and data. In S. M. Smith, T. B. Ward, & R. A. Finke (Eds.), *The creative cognition approach* (pp. 269–302). Cambridge, MA: MIT Press.
- Rinkevich, J. L. (2011). Creative teaching: Why it matters and where to begin. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 84(5), 219-223.
- Runco, M. A., & Chand, I. (1995). Cognition and creativity. *Educational Psychology Review*, 7(3), 243–267.
- Scardamalia, M., & Bereiter, C. (2006). Knowledge Building: Theory, Pedagogy, and Technology. In R. K. Sawyer (Ed.), *The Cambridge handbook of: The learning sciences* (pp. 97–115). Cambridge University Press.
- Tamdogon, O. G. (2006). Creativity in education: Clearness in perception, vigorousness in curiosity. *Education for Information*, 24(1), 139-151
- Torrance, E. P. (1972). Can we teach children to think creatively? *The Journal of Creative Behavior*, 6(2), 114–143. <https://doi.org/10.1002/j.2162-6057.1972.tb00923.x>
- Tsai, K. C. (2015). A framework of creative education. In *Education*, 21(1), 137–155.

- UNESCO (2013). Intercultural Competences: Conceptual and Operational Framework. Paris, UNESCO.

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS

UNIT 7: ANALYSING CREATIVE EDUCATION

STRUCTURE:

- 7.1 Learning outcomes**
- 7.2 Introduction**
- 7.3 Constraints with Creativity**
- 7.4 Personal constraints**
- 7.5 Professional constraints**
- 7.6 Educational experiences to enable transcend constraint**
- 7.7 Summary**
- 7.8 Questions for Practice**
- 7.9 References and Suggested Readings**

7.1 Learning Outcomes

After studying this unit, you will be able to:

- Explain the role of constraints in creativity.
- Describe the different personal constraints in being creative and suggest ways to overcome them.
- Describe the different professional constraints in being creative and suggest ways to overcome them.
- Discuss ways to transcend constraints with educational experience.

7.2 Introduction

A common myth that prevails about creativity is that it flows easily if one has more freedom. However one needs to realise that freedom is an enemy disguised as friend for creativity. it is

only when one starts to construct the freedom that a good idea can truly come into focus the constraints provide the friction that gives a spark one needs to power creativity. When we intend to solve the problem consciously, we process the information in a linear fashion but when ideas come up on their own without us leading them into a straight narrow path, unexpected combinations are born. It is these unexpected combinations that give birth to creativity.

7.3 Constraints with Creativity

The English word constraint is derived from the Latin word '**constringere**' which means binding, inhibiting, confining, controlling, compressing and making smaller. It may be intrinsic or extrinsic. Also it can be self-imposed as a choice. Onarheim and Biskjær (2013) state: "Creativity constraints are explicit or tacit factors governing what the creative agents must, should, can, and cannot do; and what the creative output must, should, can, and cannot be."

There may be many different answers to the question: What drives creativity? Some may think that it is the unlimited resources that fuel innovation and creativity but the best ideas are born from creative constraints. Creative constraints are the factors that may restrict a project, and they're the requirements and limitations we have to address in order to accomplish a goal. Constraints are undoubtedly not the boundaries of creativity but the foundations of it. Constraints create an environment that demands that we unleash that which would otherwise remain untapped, which fuels innovation. Absence of constraints leads to complacency and makes us follow the path of least resistance i.e. we follow the most intuitive idea that comes to our mind rather than investing in the development of better ideas.

Constraints can be presented in the following ways:

- Limited inputs
- Enforcing specific process
- Setting specific output requirements

For creativity to evolve and set in intentionally input resources may be restricted. It can be in form of time, material and human resources, funds and available materials for project. Secondly, specific guidelines may be given for following a specific procedure for doing a project. A product or service specifications also is a way of putting up the constraint.

Constraints as inhibitors of creativity

When constraint of time is studied it is often found that the presence of time pressures or production goals has typically been described as a negative influence on creativity because it discourages exploration and increases reliance on status quo approaches (Amabile, 1996). Similarly researches focusing on financial and other resource constraints argued that creators need to feel comfortable and provided with sufficient resources in order to be maximally creative. However it is important to mention that too much of constraints may also hamper an individual's motivation. If the space within which creative ideas are generated becomes too narrow, it is harder to form novel connections and serendipitous insights – both of which are vital for creativity.

Constraints as enabler of creativity

Constraints such as standardized processes and routines (e.g. institutionalized problem-solving or brainstorming methods) can positively impact creativity, given a supportive organizational environment for innovation (e.g. Hargadon & Sutton, 1996; Gilson et al., 2005). Obstacles can broaden your perception, open up your thinking processes. Consistent constraints help you improve at connecting unrelated ideas and concepts.

The impact of constraints on creativity suggests that constraints do not necessarily impede, and may even enhance creativity, depending on how they are managed and the environment in which they occur. Limitations help us find a focus. Too much to choose from can be paralyzing or overwhelming for those who are not yet confident. They help us filter out all of the unnecessary distractions that can prevent us from developing creative ways to problem solve they help us to move closer to attainable goals.. Limitations allow us to focus our ideas and push the boundaries once we have mastered a craft. Constraints emerge as an avenue for new discoveries within existing materials and allow us to find boundaries and work within the confines of rules and laws. They can help with collaborative work requiring multiple minds to coordinate the development of a new concept. Limiting the options and materials can also provide a less stimulating environment and allow an individual to create with a focused and relaxed state of mind.

Check Your Progress-1

1. What do you understand by the concept of constraints in education?

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2. Bring out the role of constraints in creativity.

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7.4 Personal Constraints

A personal constraint is a constraint on action that arises from certain associative relations or psychological traits of an individual that restrict one's approach of being creative. They are a self chosen rule (i.e., different from the rules that are imposed by the use of a process or those of convention); it is also a rule that is used systematically throughout the work. Creativity lies in all of us but its expression is driven by a number of factors. Being creative involves risk of failure and not everyone dares to take the risk. Some of the personal traits that are detrimental in being creative are:

- **Time management skills:** Time constraint can be real or the product of our own ambition and imagination. However it helps an individual to avoid the trap of perfectionism. Also you can fail faster. Failure is crucial to innovation, and the less time one spend on the wrong idea is more time to move to the right one. However, for a person who is unable to manage his time, this is constraining in attainment of goal.
- **Fears:** Subconsciously or consciously everyone is afraid of change and failures which often gets reinforced due to societal shame, disapproval or ridicule. Many us do not take the road which looks fresh and has no footmarks. It is our fear of completing the journey with the new path that prevent us from being innovative. One feels secure in following others or choosing the path that others follow.
- **Poor communication skills:** One needs to develop skills to stand differently while presenting an idea. Come up with a better story, a more powerful metaphor or analogy, or a novel focus on your market's needs. The inability to word ones ideas and feeling in the right way does not leads to creation of a creative product in the right way.
- **Stereotypes:** Men and women in mixed-gender groups try to avoid behaviors that might confirm negative gender stereotypes; men may be wary of sharing ideas that come off as offensive, while women may be concerned about whether their ideas will be rejected by the group, or even seriously considered.
- **Personality traits:** Personality traits like motivation, self efficacy beliefs, disposition, attitude etc. act as a constraint in the pathway of creativity. It is the personality traits of an individual that drive them to innovation. When a person lacks confidence or has poor self efficacy belief then he is unable to identify intrinsic motivators. Lack of intrinsic motivation leaves no reason of work on different ideas and to think creatively. Being

creative requires a risk taking bold personality. There are instances where inventions did not take place with just one efforts or where they were rewarded at the very first instance. The journey of a creative product is full of challenges and failures, and one needs the ability to face challenges and overcome failures.

Overcoming personal constraints

Constraints have the ability to act both as an inhibitor and as an enhancer of creativity. The approach of the individual determines how they get utilized. As an individual, we need to make an effort to change these constraints into opportunities. Constraints must not only invigorate inventive thinking but also reduce the complexity of the problem at hand.

A few strategies that can be adapted are:

- **Set up a timer to complete the work:** Use a time management method that breaks down work into intervals (traditionally 25 minutes in length) separated by short breaks. Bursts of focus with frequent breaks can improve the mental agility. This refreshes the mind, prevent procrastination and brings in innovation.
- **Commitment to small task:** Instead of thinking of completing the entire task in one go, take small steps and show commitment. Fully devote yourself to developing your creative abilities. Do not put off your efforts. Set goals, enlist the help of others, and put time aside each day to develop your skills.
- **View constraints as challenges:** Instead of perceiving constraints as inhibitors they should be seen as creative challenges. When faced with restrictions the situation forces us to use our creativity to find new solutions. If we shift our perspective, constraints help one to maintain focus and direction.
- **Adapt to the situation:** When circumstances beyond your control (the stock market or natural disasters, for instance) impact your business, you're left with two choices: pivot or perish. Don't let fear paralyze you; instead, use creative constraints to envision the possibilities.
- **Use them to create new opportunities:** when situation turns limiting as the present pandemic turned out for education sector, it can be explored as a chance for an important innovation and improvement. The present situation opened up all new avenues for digitization of education, use of ICT resources and more networks.

Check Your Progress-2

1. Identify a few personal constraints in the path of creativity?

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2. Devise a plan to overcome personal constraints?

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7.5 Professional Constraints

The aspects of the immediate work environment that inhibit the translation of motivation and abilities into effective performance. They may negatively influence practiced creativity which reflects the extent to which one perceives to be able to actually exploit their creative potential at work.

Following are the factors related to professional life of an individual that may emerge as a constraint in the process of creativity.

- **Organizational climate:** The working environment if driven by organizational politics offers the biggest constraint to innovation. Here people are motivated by a blend of saving face, maintaining momentum, and being recognized as a hero. An individual may benefit from challenging current practices and moving towards becoming more active and strategic innovators only if the organizational climate to a certain extent allows for it
- **Financial resources:** Often organization having a bunch of innovative ideas donot have enough money to bring them to action. However if put in right perspective constrained financial resources may be beneficial to creativity. Financial constraints lead to the ideation of more creative products. Yet these products are generated using fewer inputs and a lower budget than products generated in an unconstrained condition.
- **Market realities:** The expectations of the stakeholder , their work habits and needs also come up as a constraint in the path of innovation that doesn't fits in the existing requirements of the market.
- **Institutional vision and objectives:** The mission, vision statement and the institutional rules act as an restriction that many innovative employee dreams of breaking but are

unable to do so due to the trouble, employee may land into. But remember Breaking others will make you successful beyond your wildest dreams.

- **Lack of recognition:** Though there are practices of giving awards and certificates of recognition to innovators, they are not adequate or timely enough to motivate the employees to take up innovative project. The existing award and recognition system is localized, that is, limited to the unit level. There is no system at the organizational level to spot the talent and achievement for recognition. It is also felt that awards are not commensurate with the efforts and achievements of the respective individuals/teams.
- **Poor handling of change management:** When ever a change in management occurs it brings along with a new perspective, a new approach and a new method of working. If the change is not handed professionally, it restrict the employee for testing a new concept or idea.
- **Poor team formation:** Unstructured approach in forming teams results in delay in completion of projects. Often more deserving personnel from the lower levels are left out. Obviously this leads to frustration among the lower levels and reduces their involvement in future projects.
- **Poor documentation:** The absence of a centralized agency for documentation would also make the data inaccessible to other departments for reference. The lack of systems has also created problems for on-going projects as there is nothing to look into to or to learn from previous experience while planning and implementation.
- **Unclear norms on linking innovations to professional growth:** Lack of objectivity in assessing innovation for professional growth act as a constraint. While the intrapreneurial initiatives and achievements of the individuals do get noticed within the organization, the way they get reflected in their periodic appraisals is very subjective. Such a situation arises because of the absence of any clearly stated policies/norms for giving weightage to the intrapreneurial achievements of employees in their formal appraisals.
- **Procedural delays:** Administrative procedures are often a source of discomfort for innovators. Furnishing unnecessary details on small requirements and obtain approvals from several levels frustrate the employee.
- **Overly-Rigid Professional Learning Communities (PLCs) :** Asks teachers to agree on standards, share instructional strategies, and gather again to disaggregate the data.

- **Expected evaluation:** The knowledge that a “judge” of some kind will be assessing the work once completed puts undue pressure and may limit the thought process involved in creativity.
- **Defined procedure:** many a time that pattern or the method to do a particular task is defined. The individual is expected to follow the same and in such a situation thinking something new gets restricted.
- **Stressing on extrinsic motivation:** If power, money, and fame or other extrinsic motivators are put into use, then it undermines creativity as they undermine the intrinsic motivation to create for its own sake, for the love of it. Motivated primarily by the interest, enjoyment, satisfaction, and personal challenge of the work itself—and not by extrinsic motivators.

Overcoming professional constraints

- **Make people part of change:** make people part of the change from the beginning—if they don’t create it, they’ll feel threatened by it. And, if they feel threatened, they’ll fight back.
- **Share success stories:** Endorse channels of communications that allow employees (or even customers) to share stories representing the organization's purpose. It leads to create communities of passion that share praise for those outside the company who act towards the same purpose.
- **Empower employee:** Having a leaders that prioritize, incentivize, and create an inspiring vision for innovation. Decentralize the power. Innovation really does have to move both up and down the chain of command.
- **Reward innovation:** The annual incentives or the budget allocated should be based on the innovations. Celebrate and reward individual or team innovation successes through rituals, activities that can help nudge the culture of your team or organization toward behaviors that support creativity.
- **Create a strong innovation climate**— Stress on the climate that is characterized by support for innovation, shared vision and objectives, shared commitment to excel, and sense of security. Such a climate is not only instrumental for innovation in and of itself but also for enabling people to navigate creatively under stricter constraints. Employees

are more likely to embrace limitations in their creative pursuits in environments with open communication, collaboration, and supportive leadership and supervision.

- **Boost intrinsic motivation:** Rewards can—under some conditions—enhance our intrinsic motivation and creativity. Rewards that we focus on as the reason for doing a task hurt our creativity. But unexpected or unchosen bonuses and rewards may boost it, especially if they support our engagement in something we’re already quite intrinsically motivated to do.

High-creativity projects tended to have environments that were more intellectually challenging and offered sufficient resources, greater degrees of freedom, and much encouragement of innovative thinking, as opposed to harsh evaluation of new ideas—all aspects that support intrinsic motivation. Creativity-promoting environments also included work groups that were supportive, trusting, and receptive to new ideas, but also willing to constructively challenge each other’s ideas.

<p>Check Your Progress-3</p> <p>1. What are the constraints related to the environment in creativity?</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

7.6 Educational Experiences to Enable Transcend Constraints

Creative Constraints is a fundamental principle of creative mediums. Educational experiences should not be bound by boundaries. Rather they should enable the learner to push the boundaries to achieve creative outcomes.

A major question that crosses our mind is that our education supporting or constraining creativity. Many researchers argue that as the child progress through his schooling , he looses his genuine interest and innate curiosity in exploring things around him and they seem to be educated out of creativity (Robinson, 2009; Sarason, 1990; Sharan & Chin Tan, 2008; Sternberg,

2006). This happens, they say, because much of what young people do in school is driven by an idea of ‘the right answer’ and one standard way to get it. The older young people get, the less they have courage to try other ways of thinking and the more they try to avoid being wrong.

Education policymakers and practitioners need to accept is that there are many of us who need to move to be able to think and to create new ideas. Too much deskwork and listening to a teacher is not good for nurturing creativity. We need to revamp the transactional processes in our classrooms. Educations needs to help transcend constraints in creativity owing to the need of global economical emergency, technological advancement and the urgent need for change.

Constraints Within Our Education System

- Schools are in the field of competitions where teachers, parents and management are all working to look for methods to beat other schools in the race. Schools recreate their vision not for students learning but the competition for resources.
- Introduction of standards for teaching, curriculum, expected learning outcomes, school facilities, technologies and so on to facilitate uniformity and collaborations among different educational institutes.

What are the enablers that help to overcome constraints

To facilitate creativity educational experiences at schools have to be redesigned to nurture the innate qualities of a child driving him/her towards creativity.

Promoting risk taking: Sensitivity towards trying new things or alternative ways of doing old things should start from teacher communities. Unless teachers feel free and safe to take risks in their work, they will not be able to take risks when they teach their students. This, in turn, is only possible in an environment that is based on mutual trust, respect and honesty. When trust disappears fear becomes the dominant feature of schools

Prompts and Scaffolding: Giving student a limited set of of materials (components, time, words, artifacts) forces them to deeply look at the affordances of these item, and see where they lead.

Clarity- once you define the limits or challenge, there's no need for complex directions or further explanations. It's easy to understand, explain, and assess. Students will find a 'workaround' but that's innovation.

Giving choice as a spectrum: Strategically structure the choice for your media and outcomes. Provide opportunities for safe practice and risk-taking without academic consequences. When we limit the risks to one or two, rather than eight open-ended factors, our students have more chance for success.

Cognitive Flexibility--Students doing their project is an initial learning experience; students who see the varied creations of others is extremely powerful. It opens up a sense of possibilities when they were initially confronted with limits. Students can remain proud of their work, but often marvel at the unique directions that others took the work.

Use team based collaborative challenges: Collaborative teamwork, in its most basic form, provides constraints to individuals who are introvert and individualistic in nature. Challenging the students with opportunities to solve a problem with team members can add to their overall brain power. Teaming up provides opportunities for practice in persistence and creativity with a safety net of the squad. Creative schools is more collaborative cultures that include professional collegiality between teachers and cooperative learning among students. Collaboration and cooperation in school build stronger social community that can strengthen trust, enable enriching interaction between teachers and students and lead to enriching communities

Systems Thinking-- Most work and human activity is situated in a system, and systems thinking has been identified as a key 21st century skill. Treating constraints intentionally develops the mindset of systems thinking.

Practice identifying choice and constraints: It's important to discuss how real-life reflects all sorts of choices and constraints. In real life often one faces constraints. One may want to go out with friends but still constraints like whether they have driver license or a car or cab or money and above all parent permission act as an constraint. Practicing identifying choices and constraints ultimately helps students make better decisions both in life.

Practicing unrealistic prompt: Give students unrealistic prompts like designing a table with six tentacle octopus. Have the students consider both choice and constraint to an imaginative

prompt. This enable modeling on how to consider all choices they might have, but also the limitations that help make our freedom feel more realistic and approachable.

Flow--this is more opinion than characteristic, but it is been noticed that student engagement is higher on work and projects based in creative constraints. It's quicker from them to take ownership, encourages enough of a 'similar experience' to keep a sense of community, but allows enough creativity for their individual points of view.

Using alternative assessment procedures: Journal can be used as assessing and measuring of attainment of learning outcomes along with assignments. The journal promotes active reflection and is meant to demonstrate the student's steps in reaching a creative outcome, and the ability to communicate and share ideas with an audience in a manner suited to participation in a creative community, whether that is, for example, working as a professional within the creative industries or as an artist preparing for a gallery exhibit

Check Your Progress- 4

1. Is our education system a barrier or enabler of creativity? Discuss

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7.7 SUMMARY

- There are a number of factors that may act as an inhibitor and restrict the expression of creativity. Such factors are called constraints
- The factor limited to the traits or reasons limited to the individual are personal constraints whereas those which are external and related to the professional life of the individual are called professional constraints.
- Constraints can both act as an inhibitor or enabler of creativity. It depends on the way the person reacts to them. Effort should be made to view them as an enabler. Necessity and limitations often lead to innovations and creativity.
- Educational experiences at the schools or other formal institutes should help one transcend personal and professional constraints. All efforts at schools should be directed

towards improvement of child learning experiences and make them competent to face challenges and think out of the box

7.8 Questions for Practice

1. Critically evaluate the role of personal constraints and professional constraints in creative expression by an individual?
2. Devise an action plan to overcome personal and professional constraints.
3. Suggest some ways to enable educational experiences transcend these constraints.

7.9 References and Suggested Readings

- Amabile, T. M. (1996). *Creativity in context: Update to "The Social Psychology of Creativity."* Westview Press
- Gilson, L.L. , Mathieu, J.E. , Shalley, C.E. , & Ruddy, T.M. 2005. Creativity and standardization: Complementary or conflicting drivers of team effectiveness. *Academy of Management Journal* , 48: 521-531.
- Goncalo, J. A., Chatman, J. A., Duguid, M. M., & Kennedy, J. A. (2015). Creativity from Constraint? How the Political Correctness Norm Influences Creativity in Mixed-sex Work Groups. *Administrative Science Quarterly*, 60(1), 1-30. doi: 10.1177/0001839214563975.
- Onarheim, B., & Biskjær, M. M. (2013). An Introduction to 'Creativity Constraints'. In *Innovating in Global Markets: Challenges for Sustainable Growth*. Proceedings Lappeenranta University of Technology Press
- Robinson, K. (with Aronica, L.) (2009). *The element. How finding your passion changes everything*. New York: Viking Books
- Sarason, S. (1990). *The Unpredictable Failure of Educational Reform. Can we change the course before it's too late?* San Francisco, CA: Jossey-Bass
- Sharan, S. and Chin Tan, I. (2008). *Organizing schools for productive learning*. New York: Springer.
- Sternberg, R. (2006). Creativity is a habit, *Education Week*, February 22..
- Sutton, R. I., & Hargadon, A. (1996). Brainstorming groups in context: Effectiveness in a product design firm. *Administrative Science Quarterly*, 41(4), 685–718.
- <https://www.linkedin.com/pulse/20141115195523-36384170-five-reasons-to-teach-with-creative-constraints>

CERTIFICATE COURSE IN CREATIVITY AND INNOVATION IN SCHOOL EDUCATION

COURSE: BUILDING AND SUSTAINING INNOVATIVE ORGANISATIONS (CISE-3)

UNIT 8: FACILITATING CREATIVE EDUCATION: ROLE OF PARENTS AND TEACHERS

STRUCTURE:

- 8.1 Learning outcomes**
- 8.2 Introduction**
- 8.3 Role of teachers in facilitating creative opportunities**
 - 8.3.1 Developing students' creativity in classroom**
 - 8.3.2 Teachers: develop your own creativity**
- 8.4 Role of parents in facilitating creative opportunities**
- 8.5 Learning technologies in creativity**
 - 8.5.1 Ensuring appropriate use of learning technologies**
- 8.6 Social and policy context of creative education**
- 8.7 Summary**
- 8.8 Questions for Practice**
- 8.9 References and Suggested Readings**

8.1 Learning Outcomes

After studying this unit, you will be able to:

- Explain the role of teacher in facilitating creative opportunities.
- Describe the role of parents in facilitating creative opportunities.
- Illustrate the use of learning technologies in creativity.
- Discuss social and policy context of creative education.

8.2 Introduction

Creativity is essential for social economic innovation and development. it develops a desire for self expression and identity on a personal level. It is a core to progress in knowledge societies. across continents, creativity is a priority for education and is central to the discourse on 21st century learning. it has been emphasized that there is a need of preparing learners for the unknown: jobs that do not yet exist, technologies that are yet to be invented, and problems that have not yet been anticipated. A greater focus on creativity can change the dynamics of teaching and learning and teachers often nurture everyday creativity and themselves develop more creative approaches to teaching

8.3 Role of Teachers in Facilitating Creative Opportunities

The foundation of what gets transmitted in the classrooms is laid by the teacher. A teacher plays different roles to ensure that the teaching learning process goes on smoothly. Besides being the organizer of the educational process, the teacher is very often the leader, parent and source of information. Teachers provide continuous support in positive development of children. The teacher as a facilitator needs to discipline students and teach them how to behave in different social situations. Also, the teacher organizes the students' environment and motivates them to learn and, to a large extent, transfers the contents of subjects to students in an appropriate manner.

Teachers who can model creative ways of thinking, playfully engage with content, and express their ideas, will beget creative students. Students need to see teachers who have passions, whether it's drawing, mathematics, painting, biology, music, politics, or theater. That contagion of passion and positive emotion is a hotbed for creative thought. Creatively fulfilled teachers may also be happier teachers. Creativity also directly enhances learning by increasing motivation, deepening understanding, and promoting joy.

8.3.1 Developing students' creativity in classroom

Creativity can develop only in a safe environment where students can exercise autonomy, take risk and get support. Teacher can nurture creativity in students by ensuring following steps

- **Create a compassionate, accepting environment:** If students will try something new, there are chances of failures and making mistakes. Students will take initiative only if they trust that their mistakes and failures will be accepted. A classroom environment overstressing on success will not promote creativity.
- **Be present with students' ideas:** Teachers need to talk with students to know their passions, interest and hobbies. The learning process should be build on students needs and interest. This would ensure more idea generation and compliance.
- **Encourage autonomy:** Student should be given freedom to perform task as per their choice. Teacher should give feedback that encourages self-assessment and independence.
- **Re-word assignments to promote creative thinking:** Phrasing assignment and questions using action verbs that promote critical thinking, analysis and problem solving creates motivation in students to think out of the box.
- **Give students direct feedback on their creativity:** Lots of students don't realize how creative they are, or get feedback to help them incorporate "creative" into their self-concept. Explore the idea of "creative competence" alongside the traditional academic competencies in literacy and mathematics. When we evaluate something, we value it! Create a self-concept that includes creativity.
- **Help students know when it's appropriate to be creative:** Develop context of practicing creativity and provide students with situations to show innovation.
- **Protect and support your students' intrinsic motivation:** Intrinsic motivation fuels creativity. Focusing on self-improvement should be encouraged. Experiment with monitoring students less as they work, and provide opportunities for them to pursue their passion when you can.
- **Make it clear to students that creativity requires effort:** The creative process is not a simple "aha" that strikes without warning. Tell students that truly creative people must imagine, and struggle, and re-imagine while working on a project.
- **Explicitly discuss creativity myths and stereotypes with your students:** Help them understand what creativity is and is not, and how to recognize it in the world around them.

- **Foster a Question-Friendly Environment:** Help students develop the habit of asking “why” questions about information, ideas, and beliefs normally taken for granted. Never dissuade students from asking questions, rather reward the habit of asking questions.
- **Practice Generating More Ideas:** Allocate fixed time towards creativity for students. Creativity is a muscle that grows stronger and more efficient the more we exercise generating ideas. The more ideas we come up with, the more original the ideas generated will be. The more ideas we come up with, the greater our chances of producing a work of success.
- **Encourage New Skills:** It’s great for students to major in a singular field, whether it’s science, math or art. To foster new ideas and a unique perspective, however, encourage them to learn a variety of skills and subjects. The more unrelated the field, the better.
- **Model Creativity in the Classroom:** To help students unleash more creativity, lead by example, and openly share your original ideas with the class. Model what it looks like to be open to feedback and bounce ideas off of one another.
- **Use the Jigsaw Classroom Method:** When assigning classroom activities, allow students to do some work on their own. Doing individual work not only prevents groupthink, but it also facilitates student participation and helps them value their peers’ strengths more.

8.3.2 Teachers: develop your own creativity

Teachers should model creativity and develop a positive state of mind. Such an attitude will sustain creativity and inspire the same in students. Some ways teachers can develop and nurture their own creativity is

- Examine your attitude towards creativity to identify one’s own limiting misconceptions about creativity.
- Always try new pedagogical strategies. Design new activities for curriculum transaction and assessment.
- Challenge yourself in designing your lesson plans according to needs and preferences of the specific learners in your classroom. Pay attention to students’ talks in corridors, during recess to develop insight into their interest.

- Practice focused-attention meditation to perform better on convergent thinking.
- Have cross cultural experiences to get new ideas of innovating.
- Challenge your conventional ways of thinking by taking a different route to work, listening to a new genre of music, go to a museum and check out a style of art you're unfamiliar with.
- Embrace the gray areas, the ambiguities. "Ambiguity tolerance" is a key component of creativity.

Check Your Progress- 1

1. How can a teacher ensure development of creativity in a classroom?
2. Why does a teacher need to develop his /her own creativity for facilitating creativity in learning environment?

8.4 Role of Parents in Facilitating Creative Opportunities

Research emphasized the importance of the early childhood period on the development of creativity (Calvert & Vilson, 2010). Torrance (1963) and Fein (1981) suggested that the development of imaginative play makes its peak during the preschool years (between ages 5 to 7). Besides this, parents are also people who can nurture creativity for their children, because they spend lots of time in caring and teaching their children, especially as they are in early childhood. Therefore parents have essential roles in educating creativity for their children. Creative thinking skills are not inherent characteristics; they can be taught and developed by providing appropriate learning environments that reveal the creativity of the student (Loveless, 2002).

Providing the children opportunity of expression through Art

There is no denying the fact that art has connections between feeling, making, and learning. Experiences in the arts offer many intrinsic and extrinsic benefits to elementary children. Intrinsic benefits include opportunities to develop creativity and imagination, and to experience joy, beauty, and wonder. Arts also presents occasions to make the ordinary special, to enrich the quality of our lives, and to develop effective ways of expressing thoughts, knowledge, and feelings. There is also evidence of extrinsic benefits, as learning in,

about, and through the arts contributes to increased engagement in learning in other subject areas, and to the development of children's self-confidence, social skills, and metacognition.

Providing play opportunities for exploration and innovation

To develop children's creativity, it is necessary to have a creative environment. In order to facilitate creative thinking. Imaginative play (especially role play) and free choice of activities would seem to be key components of the early childhood setting in relation to creativity (Prentice, 2000). It allows them to digest life and make it their own. It is an outlet for the fullness of their creativity, and it is an absolutely critical part of their childhood. With creative play, children blossom and flourish; without it, they suffer a serious decline. Play allows children to be creative while developing their own imaginations. It is important to healthy brain development. Play is the first opportunity for your child to discover the world in which he lives. Play offers a child the ability to master skills that will help develop self-confidence and the ability to recover quickly from setbacks. To foster healthy play at home, parents need to create an optimal environment and supply play materials for their children. It is better to use natural materials such as wool, cotton and silk, stones, wood and metals for children to play.

Influencing Creative Thinking Skills with their Preferences

Children would be more successful if their parents enthusiastically engage in their education (Barton & Coley, 1992; Yan & Lin, 2005). Taneri concluded that both the emotional and physical environment of home can contribute to the improvement of creative thinking skills. When the parents are aware of the effects of toys, equipment, games and activities on children's creative thinking skills, they can easily create "creativity-developer" home environments (Taneri, 2012). Parents have an extremely important role in enhancing creativity for their children. In addition, the periods of time parents can spend to play with their children, to communicate with them and even the way they communicate with their children also impact on their children's creative thinking skills. Therefore, parents need to spend a specific time for playing and communicating with their children, ask them open ended questions, encourage them think in new and different ways

Family background and children creativity

Parents have an enormous influence on their children's education for several reasons, but most importantly because they are their children's first teachers. Parents strongly affect this social learning process because they are the biggest influence at this early stage in their children's lives. Uniquely the mother's education has a significant impact on her children's learning process. Parents economic background and job profile also influence the learning environment the child gets. Low income parents are less likely to get engaged with their children's learning and also sometimes result in prevalence of stress in the family. This environment is not conducive for creative expression.

Check Your Progress-2

1. How can family background influence creativity of a child?
2. What role have play opportunities in nurturing creativity in children?

8.5 Learning Technologies in Creativity

There is no denying the fact that our classrooms force learning to happen with traditional methods of teaching. However the real world demands expression and creativity. There seems to be serious imbalance which has always been a concern for the educator. Lack of engagement in our traditional classroom is a major reason of drop outs and poor retention. Creativity in classroom energizes the students. One primary barrier to creativity in education institutions is the curriculum and traditional pedagogy. Keeping in mind the ever-changing landscape of education, we need to re-design the traditional function of education institutions and methods of learning and develop a more flexible, balanced and skill-based curriculum that will include diverse and cross-curricular activities to ensure more participation.

Technology supports creativity in the classroom because it is a medium that requires interaction. Technology is a platform that allows students to engage in meaningful creative activities and explore their own potential. It lets them learn through curiosity, collaboration, and critical thinking.

Sharing technologies

Social interactions offer a clear way of giving students a sense of their content's worth in the eyes of their peers. They can also be used to drive students' motivation to create high-quality work that will be of value to others. True exploration involves cooperation too as learners discuss and share ideas with one another. Technology can allow educators and students to easily create Study Groups that are perfect for these kinds of exchanges as they provide a space for challenging one another's ideas intelligently and constructively.

Mind Mapping

Mind Mapping tools can boost student creativity in the classroom as they provide them with different ways to interconnect their thoughts, thereby challenging them to visualize as they seek to find new correlations. It gives visual representation of how a student thinks and how well they understand a topic.

Slides/multimedia

This encourages flexibility and lateral thinking in students as they consider which content type would best support their main points. In addition, the multimedia nature of Slides encourages students to continue to develop their digital literacy skills.

Blogging

Blogs are a great way for the development of creative thinking and writing in students. It provides freedom to students to post whatever they want and comment upon or share each other's material. They can openly write on topics that intrigue them and give vent to their ideas without having to worry about grading or grammatical errors. Students can volunteer to organize and manage a common class blog, which will act as a common source of expression for the entire class. Blogging makes students feel responsible for their own learning and they are encouraged to incorporate creativity in their learning through them, which they could not do before. Few free blogging platforms for teachers and students are, Edublogs, Blogger, WordPress and many more.

Cartoon and Comic Strip Tools:

Students love cartoons and comics, we can tell this right from the shine in their eyes whenever teachers introduce such material into their lesson plans, students automatically get engaged more than ever. So, why not introduce students to a set of free and friendly tools to empower them to create their own comic strips or cartoon animations. This will give them a chance to let loose their creative powers and delve into the world of creativity without any hindrance. Let them create their own cartoons to conceptualize a topic or a popular figure, in the way they want and let them express what they think about a school event in a comic way. ‘Cartoons for the Classroom’ is one popular website, which is a great resource of comic strips for students and teachers.

Video and Audio tools

There are many easy to use video and tutorial creation tools that students and teachers can use in their teaching and learning. Students can create their own videos and share them with their class, which can be a great opportunity for them to develop their creative skills. Audio tools are equally significant; students can create short embeddable audio clips using them. They can even simulate a discussion with others or anything else they want. They can record it and share it with their mates on the class blog or school website. Some video-making tools for students and teachers are Jing, Camstudio, Screenr, etc. Some audio-recording tools are Vocaro, Audio Pal, Record MP3 and more.

Digital storytelling tools

Telling a story is a powerful way to communicate with others. It improves the creative skills of students and helps them explore the meaning of their own work and experience. Students can create their own digital stories with many available free tools, namely, Story Bird, PicLits, Slidestory and more.

Games: Games have incessantly proven to be one of the best ways of promoting co-operation and creativity. Educational games keep students engaged with their study, ignite the interactive and imaginative element in their thinking and mould it towards creativity. Now, games have

become a must to be included element in education. Some educational games freely available online are Capital Penguin, Grammar Gorillas, FunBrain.com and more.

8.5.1 Ensuring Appropriate Use of Learning Technologies

Integrating social media

Integrating social media into your classroom is among the most innovative ways to use technology in the classroom by connecting students to curriculum, classroom resources, and one another. Create a Face book group specifically for your class where you post discussion topics or develop unique classroom Twitter hash tags students can use to discuss lessons or ask questions.

Collecting regular feedback

Colleting regular feedback from students is vital to assessing the true test of classroom structure or curriculum transaction, and determining what is and isn't working, and addressing problems and confusion as they arise. Use online surveys and polls to perform daily or weekly check-ins with students to get their opinions on lessons and address lingering questions or concerns. Expand on the usage of Twitter hashtags by having students tweet their feedback and questions with a classroom hashtag.

Creating digital content

Creating digital content related to the things they are learning is a great way for students to display their individual creative talents as well as showcase learning. Provide options for students to express themselves through blogs, videos, podcasts, eBooks, flyers and other digital art, or any other means they feel most comfortable. Respecting each student's individuality and needs for creative expression helps them flourish as learners

Guided learning

The key tasks of educators are to help students critically evaluate online content and distinguish what is credible from what isn't. Students will only be able to source quality information if they learn to be more discerning web users. They must learn to cross-check information in an online environment as well as in an offline one. Such efforts promote individual research, digital

responsibility, critical evaluation and web navigation skills. They leave students better prepared for the future.

Using classroom calendar

Develop a shared online calendar for your classroom through Google Calendar or a similar program for posting important updates. Post assignment due dates and classroom events (such as field trips and guest speakers) in one easily-accessible location for both teachers and students. You can share the calendar with parents to keep them connected and engaged with their child's learning.

Online Activities

Set up learning stations to encourage and support students working at their own pace. If a student finishes an assignment early, rather than being stuck waiting for other students to catch up or class to end, students can extend and enhance their learning by visiting a learning station and watching videos, playing learning-based games, or exploring other online activities related to their learning.

Check Your Progress-3

1. What are the technologies in education that can help nurture creativity in education?

8.6 Social and Policy Context of Creative Education

When a child enters the school, he has developed the context of learning in different ways. The child needs to have readiness in the emotional, social, and motivational realms but the ability to adapt to the new constraints of the classroom, the social skills that are needed to participate effectively in classroom discourse, and the self-esteem and sense of agency required to work hard and learn intentionally. Education is influenced by the relationships between student and teacher and among students. We design to make child a productive citizen of the country.

A child's understanding of subject matter, forms of knowledge a learner has, the prior knowledge of the child influences the acquisition of new knowledge. It is important to mention that most of

the learning in schools occurs in a social context in which individual actions and understandings are negotiated by the members of a group. Social perspective is based on socio cultural theories of learning that emphasize the role of social interaction with more knowledgeable others (Vygotsky, 1978) and activity-oriented work in a social setting (Leontev, 1981). Students who understand that a teacher's question about a text requests an explanation for their interpretation rather than the literal interpretation itself will participate more effectively in that classroom's practice.

Various social factors that are part of the group, task, and situation context influence the cognitive, social, and motivational processes that are critical for the group creative process. Creativity in education can be influenced by various social and political factors that control the management and administration of social and governmental institutions. Rowlands (2011) was of the view that a truly creative idea, is not one that is merely novel but innovative with respect to a background of ideas and it must rely on the insights of predecessors. Jaworski (1994) also confirms that the accumulation of global and local knowledge contribute to how students conceptualize their views to the world. It is, therefore, critical to understand global and local factors affecting creativity in education.

At its most concrete level, policy determines what level of resources provided, allocated, delivered in educational services, and how policy makers and educators will be held accountable. At a more abstract level, policy also communicates ideas about what constitutes a good education and how that education can best be achieved. It signals what expectations political decision makers and their constituents hold for the education system, and it specifies a set of assumptions about the steps needed to achieve those aspirations. Included in those assumptions are judgments about the incentives most likely to change teaching and learning, the preferred institutional arrangements to promote desired outcomes, and the resources and technical skills most needed.

The National Education Policy 2020 lays particular emphasis on the development of the creative potential of each individual, in all its richness and complexity. It is based on the principle that education must develop not only cognitive skills - both 'foundational skills' of literacy and numeracy and 'higher-order' cognitive skills such as critical thinking and problem solving – but also social and emotional skills - also referred to as 'soft skills' - including cultural awareness

and empathy, perseverance and grit, teamwork, leadership, communication, among others. According to the policy the aim of a quality university or college education must be to develop good, well-rounded, and creative individuals. It must enable an individual to study one or more specialised areas of interest at a deeper level, while at the same time build character, ethical and Constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service, and 21st century capabilities across a range of disciplines including the sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational crafts.

The vision of the policy is to improve the quality of education by giving an equal space to creativity and innovation and transform India into a vibrant knowledge society.

The Education Policy 2020 focuses on innovation and creativity in the following ways-

- Digital Infrastructure for Knowledge Sharing (DIKSHA) will be a national repository of high-quality resources on foundational literacy and numeracy. Technological interventions to serve as aids to teachers and to help bridge any language barriers that may exist between teachers and students, will be piloted and implemented.
- Enjoyable and inspirational books for students at all levels will be developed, by using high-quality translation (technology assisted as needed) in all local and Indian languages, and will be made available extensively in both school and local public libraries in order to improve the quality of education.
- With the help of technology and innovation, expansion and strengthening of Open and Distance Learning (ODL) Programmes offered by the National Institute of Open Schooling (NIOS) and State Open Schools has been thought of to strengthen for meeting the learning needs of young people in India who are not able to attend a physical school.
- Promoting multilingualism, the teaching of all languages will be enhanced through innovative and experiential methods, including through gamification and apps, by weaving in the cultural aspects of the languages - such as films, theatre, storytelling, poetry, and music
- To improve innovation and increase the number and types of courses, High performing Indian universities will be encouraged to set up campuses in other countries, and

similarly, selected universities e.g., those from among the top 100 universities in the world will be facilitated to operate in India. Efforts will also be made to incentivize the merit of students belonging to SC, ST, OBC, and other SEDGs

- For the professions involving Artificial Intelligence, it will be very important to be well-versed with mathematics and mathematical thinking therefore, mathematics and computational thinking will be given increased emphasis throughout the school years, starting with the foundational stage, through a variety of innovative methods.
- Higher education must form the basis for knowledge creation and innovation and contribute to a growing national economy for more productive, innovative, progressive, and prosperous nation.
- Higher Education Institutions will focus on research and innovation by setting up start-up incubation centres; technology development centres; centres in frontier areas of research. HEIs will develop specific hand holding mechanisms and competitions for promoting innovation among student communities.
- The policy empowers the faculty of HEIs to conduct innovative teaching, research, and service as they see best. This will be a key motivator and enabler for them to do truly outstanding, creative work.
- In order to promote creativity, institutions and faculty autonomy has been promoted to innovate on matters of curriculum, pedagogy, and assessment within a broad framework of higher education qualifications.
- The research and innovation investment in India is, at the current time, only 0.69% of GDP as compared to 2.8% in the United States of America, 4.3% in Israel and 4.2% in South Korea. To deal with the major challenges which India faces in today's time such as healthcare, quality education, sanitation etc, a top notch science along with innovation and technology is required.
- Any country's identity, upliftment, spiritual/intellectual satisfaction and creativity is also attained in a major way through its history, art, language, and culture. Research in the arts

and humanities, along with innovations in the sciences and social sciences, are, therefore, extremely important for the progress and enlightened nature of a nation.

- To truly grow and catalyze quality research in India, this policy envisions the establishment of a National Research Foundation (NRF) which will recognise and support outstanding research at academic institutions, particularly at universities and colleges
- Professional Technical education and innovation in fields like engineering, technology, management, architecture, town planning, pharmacy, hotel management, catering technology etc., will be promoted
- An autonomous body, the National Educational Technology Forum (NETF) will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration, and so on, both for school and higher education.

The recent pandemic has highlighted the need for alternative modes of quality education. NEP recognizes both the advantages and disadvantages of technology. For online or digital education, it is very important to eliminate the digital divide. The policy also recommends certain key initiatives such as Content creation, digital repository, and dissemination; Pilot studies for online education; Digital infrastructure etc.

Recommendations for support for creativity

There is a need of developing social and policy support mechanism to enable teachers to integrate creative teaching methods and nurture creativity.

- **Support and encourage risk taking:** Schools need to challenge teachers, allow plenty of flexibility, and create a free flow between the school, families, communities and workplaces. They must encourage teachers to be curious, imaginative and open, while also challenging them to improve students' well-being and attainment.
- **feedback and support to improve practice:** teachers classroom practices should be evaluated systematically. Feedback focused on areas for improvement, followed by effective professional development can have a positive impact on student attainment.

- **Encourage collaboration among school leaders, teachers and creative professionals:** Teacher collaboration can have a strong impact on teacher learning and student attainment
- **Research and policy priorities:** Policies will need to place a higher value on creativity, supporting both open and closed learning. Priorities for policy and research include:
 - Developing clearer definitions of creativity in education.
 - Rethinking curricula to make courageous decisions regarding what to cut, what to keep and how to encourage teachers to nurture creativity within and across domains.
 - Focus on more empirical evidence on effective approaches to nurturing creativity in and beyond classrooms.
 - Exploring new approaches to assessment

8.7 Summary

- Teachers have a vital role to play in facilitating creative education. They need to create a conducive environment for nurturing the creativity of students. They also need to develop their own creativity so as develop the competence of being an efficient facilitator of creative education.
- Teachers work as formal agents of creative education. Parents need to provide a facilitative environment at home by providing them ample opportunities to explore and develop creative expression.
- Technology has the tendency to revamp and reform the way teaching learning process gets transacted in our classrooms. Use of proper learning technologies can give creative education a new direction and objectives. Teachers can make use of ample technologies to facilitate creative education.
- There is a need of developing social and policy support mechanism to enable teachers to integrate creative teaching methods and nurture creativity. The National Education Policy 2020 lays particular emphasis on the development of the creative potential of each individual, in all its richness and complexity.

8.8 Questions for Practice

1. Explain the role a teacher and parent can play in facilitating creative education.
2. Illustrate the use of learning technologies in nurturing and facilitating creativity amongst the learners.
3. What are social influences on creative education? Explain by citing examples.
4. NPE 2020 vision a complete transformation of our existing education system by making it more innovative and creative. Comment .

8.9 References and Suggested Readings

- Calvert, S.L. & Vilson, B.J. (2010). The handbook of children, media, and development. John Wiley and Sons.
- Fein, G. (1981). Pretend play in childhood: An integrative review. *Child Development*, 52, 1095-1118.
- Loveless, A. M. (2002). Literature review in creativity, new technologies and learning. A report for Nesta Futurelab.
- Prentice, R. (2000). Creativity: a reaffirmation of its place in early childhood education. *The Curriculum Journal*, 11(2), 145–58.
- Rowlands, S. (2011). Disciplinary boundaries for creativity. *Creative Education*, 2, 47-55. doi:10.4236/ce.2011.21007.
- Taneri, O. P. (2012). Roles of parents in enhancing children’s creative thinking skills. *International Journal of Human Sciences [Online]*. (9)2, 91- 108.
- Torrance, E. P. (1963). Adventures in creativity. *Childhood Education*, 40, 79-87
- <http://psychlearningcurve.org/creative-teaching-and-teaching-creativity-how-to-foster-creativity-in-the-classroom/>
- <https://edtechreview.in/trends-insights/insights/750-how-can-technology-enhance-student-creativity>.
- <https://www.gettingsmart.com/2018/01/5-ways-for-teachers-to-nurture-the-creative-genius-in-their-students/>
- <https://www.goconqr.com/en/blog/learning-technologies-creativity-classroom/>
- <https://www.goguardian.com/blog/technology/9-unique-ways-to-use-technology-in-the-classroom/>

- https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- <https://www.mondaq.com/india/education/977108/national-education-policy-2020-aims-at-fostering-innovation-and-creativity>
- https://www.researchgate.net/publication/335099597_Developing_creativity_for_children_Roles_of_parents